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"THE ELITE IN ECONOMICS"

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Abstract

We use a sample consisting of economists working in 2007 in the world top 81 Economics departments, and Econometric Society Fellows working elsewhere. Productivity is based in each individual's publications in four journal equivalent classes. We identify three elites consisting of 123, 332, and 908 researchers in a total sample of 2,605 scholars, which are partitioned into the U.S., the European Union, and the rest of the world. We investigate the following questions. (1) The "funneling effect" from countries where elite members obtain their first degree, to countries where they earn a Ph.D., and to countries where they work in 2007. (2) The clustering in a few U.S. institutions. (3) The distribution into those who study and work in the same country (*stayers*), those who study their Ph.D. abroad but come back home to work (*brain circulation*), and those who migrate after completing their education at home, plus those who remain abroad after studying the Ph.D. (two forms of *brain drain*). (4) The research gap favoring the U.S. (5) The elite in Economics versus other scientific disciplines. (6) We investigate questions 1 to 4 above for the subset of economists that earned a Ph.D. at most 25 years before 2007.

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I. INTRODUCTION

The notion of an elite is a complex conceptual question. As pointed out in the Sociology of Science, academic research communities generate their own well-defined elites among the individuals that have demonstrated the highest commitment to an ethos in which the search for scientific knowledge is the paramount objective. Similarly to elites in other contexts, Mulkay (1976) characterizes scientific elites in terms of four basic features. (i) They are privileged in two respects: having received awards, recognition, and visibility, granted in accordance with perceived scientific achievements, and having excellent access to opportunities for doing high quality work, including research funds and facilities. (ii) They tend to cluster in a few centers, and their social ties with each other are stronger than their ties with other scientists. (iii) They control or direct the activities of others by occupying positions of formal authority, committees for the allocation of research funds, journal editorial boards, scientific advisory bodies at the international and national levels, as well as by exercising informal influence in determining which work is high quality. (iv) They considerably influence the recruitment of new members into the elite. Furthermore, (v) academic elites mediate between academic communities and the wider society, successfully resisting instrumental demands from governments and other agents, and maintaining considerable freedom for members of the academic research community to pursue their own "scientifically defined" interests.

Clearly, aspects (iii) to (v) are difficult to observe. However, once an elite has been identified, there should be no problem studying whether its members cluster in a few institutions as mentioned in point (ii) above. Fortunately, a number of contributions have used a variety of empirical sources for identifying academic elites in terms of "outstanding performance" of perceived scientific achievements.[1] In this vein, in this paper we identify the elite in Economics with a set of highly productive scholars in a sense that will be made precise below. Choosing a measure of productivity to identify an academic elite is a good choice for two reasons. Firstly, the distribution of individual

[1] See Zuckerman (1977), Stephan & Levin (2001), Ioannidis (2004), Weinberger & Galeson (2005), Bauwens *et al.* (2008), Hunter *et al.* (2009), and Panaretos & Malesios (2012). For an attempt to take into account the elite's functional aspects that sociologists have emphasized, see Laudel (2003, 2005).

researchers' productivity is known to be highly unequal. Seglen's (1992) seminal contribution refers to this phenomenon –present also in the distributions of the citations received by articles published in academic journals at all aggregation levels– as the *skewness of science*. Thus, in so far as a rather small number of scientists actually produce a large proportion of published results, it is natural to identify the elite with highly productive scholars. Secondly, using size- and scale-independent statistical techniques, it has been found that individual productivity distributions are remarkably similar across scientific disciplines.[2] This opens the way for a common definition of elites in all of them.

Where do outstanding scientists generally conduct their research? In most sciences, the answer is that the majority of high quality research is conducted in U.S. institutions. However, this has not always been taken into account for policy purposes in some European quarters. The reason is that since the mid-1990s the EU –namely, the 15 countries forming the European Union before the 2004 accession– has published more scientific papers in the periodical literature than the U.S. in a majority of scientific fields, independently of the way publications are assigned to broad or detailed categories at different aggregation levels. This led to the so-called "European Paradox", according to which Europe plays a leading world role in terms of scientific excellence, but lacks the entrepreneurial capacity of the U.S. to transform this excellent performance into innovation, growth, and jobs.[3] The truth is that, once we take into account the citation impact of these publications, the dominance of the U.S. is overwhelming at all aggregation levels.[4]

In Economics, Drèze & Estevan (2007) provide an excellent survey of what we know at the beginning of the present century –namely, the date at which our samples have been constructed– concerning the following three

[2] For productivity distributions, see the landmark paper by Alfred Lotka (1926), the book by Derek de Solla Price (1963) that started the modern quantitative study of science and, *inter alia*, Nicholls (1989), Kretschner & Rousseau (2001), and Ruiz-Castillo & Costas (2014). For recent studies concerning citation distributions, see Schubert *et al.* (1987), Glänzel (2007), Albarrán & Ruiz-Castillo (2011), Albarrán *et al.* (2011a), and Ruiz-Castillo & Waltman (2014).

[3] See the executive summary of the report EC (1994) by Ugur Muldur and Luc Soete, as well as Delanghe *et al.* (2011), and King (2004).

[4] See Dosi *et al.* (2006, 2009), and Veugelers & Van der Ploeg (2008). For the 22 broad fields distinguished by Thomson Reuters, see Albarrán *et al.* (2011b, c). For a study focusing on the 250 most highly cited researchers in 21 disciplines in 1981-1999, see Bauwens *et al.* (2008). For 219 Web of Science subject-categories, see Herranz and Ruiz-Castillo (2012a, b, c).

issues for the academic profession as a whole. Firstly, the "funneling effect" (in the terminology of Hunter *et al.*, 2009) that takes place in two steps: from countries where economists obtain their first degree, to countries where they obtain a Ph.D. and, finally, to countries where they currently work. Secondly, the clustering in a few top U.S. Economics departments by those moving abroad to pursue their Ph.D. and/or to work in 2007. Thirdly, the extent of the gap between the research produced in U.S. and European institutions. Drèze & Estevan (2007) summarize different kinds of information, often of an aggregate type at the department level. Using a unique dataset of microeconomic data, the first aim of this paper is to study how the funneling and the clustering effects, as well as the research gap in favor of the U.S. evolve as we consider a succession of elites characterized by difference degrees of excellence. Naturally, the higher the productivity standard, the smaller the elite size.

For the construction of the different elites, we start from a sample of economists coming from two sources. Firstly, we pool all faculty members working in 2007 in a selection of the best 81 Economics departments in the world. There are 2,530 economists in this group that have published at least one article in the periodical literature, and for which we have complete information concerning some key aspects of their academic career up to 2007. Secondly, we add 75 economists from other institutions that had received an important professional distinction –a fellowship in the Econometrics Society, a membership in the American Academy of Sciences, or a Nobel Prize. We measure individual productivity in terms of a quality index that weights the number of publications up to 2007 in four equivalent journal classes. The 2,605 scholars from the two groups are not only very productive, but they share a common outlook through a graduate education that, in the majority of cases, takes place in the U.S. and other Anglo-Saxon countries, or is heavily influenced by the doctoral programs designed in them. Therefore, this sample forms an elite in its own right. Beyond this, we distinguish between three elites, referred to as Elite III, II, and I, consisting of 908, 332, and 123 researchers, respectively. In every elite, we distinguish between three geographical areas: the U.S., the EU, and the rest of the world (RW hereafter).

Spatial mobility is a widespread phenomenon in science that motivates the following partition of scientists into three groups. Firstly, mobility often becomes migration –a phenomenon that has given rise to a large literature

on the *brain drain*.[5] In our context, we will be concerned with what can be called the *elite brain drain*.[6] Secondly, there is a second group of highly talented individuals who study and work abroad followed by a return to the home country –a phenomenon known as *brain circulation*.[7] These two groups, taken together, will be referred to as *movers*. Thirdly, there are those who study and work in the same country, referred to as *stayers*. Having information on everyone's origin and destination, the second aim of this paper is twofold. On one hand, we study how the partition between movers and stayers in every geographical area evolves as we move from the total sample the most selective elite. On the other hand, part of the success achieved by U.S. institutions relative to the EU and the RW must be attributed to scholars born in other countries that either remained in the U.S. after obtaining a PhD there, or moved to the U.S. after attending graduate school at home.[8] Therefore, we study the research gap that refers to the output achieved by the nationals from the three geographical areas, regardless of where they work in 2007. Among the economists originating in each of the three areas, we distinguish between those who work in 2007 in their country of origin (stayers and brain circulation) or abroad (brain drain).

Relative to other scientific disciplines, particularly within the natural sciences, Economics is a new social science historically dominated by British and U.S. scholars. This justifies the third aim of this paper, namely, the comparison of the characteristics of the elites in Economics and other disciplines. Given the availability of data, we perform the following two exercises. Firstly, we compare the funnelling effect towards the U.S. and, to a lesser degree, the extent of the clustering effect towards a few U.S. institutions in Economics & Business and 20 other broad scientific fields. Secondly, we compare the geographical mobility in Economics and Mathematics, a much

[5] Initially, the term brain drain applied to the exodus of British scientists to the U.S. in the 1960s. Afterwards, this term came to designate the international transfer of human capital, and mainly applies to the migration of relatively high-skilled individuals from developing to developed countries. However, the term is also used in a narrower sense –closer to the initial meaning– relating to the migration of engineers, physicians, scientists and other very highly skilled professionals with university training from both the developing and developed countries. For a short historical review, see Gaillard & Gaillard (1997), and for two surveys of four decades of economics research on the brain drain, see Commander *et al.* (2004), and Doquier & Rapoport (2012).

[6] See Regets (2001), Section 5.2 in Doquier & Rapoport (2012), as well as the references cited in note 1.

[7] Glaser & Habers (1978), Gaillard & Gaillard (1997), Johnson & Regets (1998), Finn (1999), Section 6 in Commander *et al.* (2004), Section 4.4 in Doquier & Rapoport (2012), Edler *et al.* (2011), and Plume (2012a, b).

[8] For the importance of foreigners' contribution to U.S. science, see Finn (1999), Saint-Paul (2004), Ioannidis (2004), Tritah (2008), Section 2 in Docquier & Rapoport (2012), Panaretos & Malesios (2012), and chapter 8 in Stephan (2012).

older discipline whose original intellectual leaders can be found in many countries, and whose applied research –as in Economics– does not require capital-intensive facilities.

Our productivity measure, based on the number of publications up to 2007, clearly favors older people. Consequently, to have a glimpse of the characteristics of the elite around the year 2030, in our final contribution we focus on a subset of "young people", defined as those economists who obtained a Ph.D. at most 25 years before 2007 and are assumed to be, approximately, less than 50 years old in 2007.

The rest of this paper is organized into five Sections. Section II discusses the identification of the different elites, and presents some descriptive statistics. Section III contains the empirical results concerning the funnelling and the clustering effects, the geographic mobility, the extent of the two research gaps –depending on the geographical area where the research is produced, and on the researcher's country of origin–, and the comparison with other sciences. Section IV briefly reviews the characteristics of the subset of young people, while Section V summarizes the paper, discusses the main findings, and suggests further research. To save space, we include several Appendices.

II. THE IDENTIFICATION OF THE ELITE

II.1. The construction of the dataset

In this Sub-section, we simply state the criteria we have followed to select the different notions of the elite that will be used in the sequel.[9] We define an elite in terms of outstanding performance according to a procedure that can be summarized in the following seven points.

1. We start by selecting a pool of scholars belonging to the best Economics departments in the world. Therefore, with the exceptions discussed below, researchers working in Business Schools are excluded from this study. This restriction has the advantage of facilitating the comparability of individuals' characteristics, including any productivity measure such as the one introduced in point 4 below.

[9] A review of the previous literature on the identification of scientific elites, the justification of our methodological decisions, as well as some descriptive statistics of the dataset can be found in Appendices I, II, and III, respectively.

2. The best Economics departments are identified with the top 81 departments in the world according to the Econphd (2004) university ranking that takes into account the publications for the period 1993-2003 in the top 63 Economics journals according to the Kalaitzidakis *et al.* (2003) ranking. In this ranking, journal quality weights reflect citation counts adjusted for factors such as the annual number of pages and the age of a journal.

3. We find 2,755 economists listed in the 81 departmental web pages in 2007. The minimum information we require for each individual includes the nationality, the university where the Ph.D. is obtained, the age, and the publications in the periodical literature up to 2007. The information concerning the country of birth is very often hard to find. Therefore, we generally assign the nationality in terms of the country where each individual obtains a B.A. or an equivalent first college degree. Similarly, since people's age is not generally available, we use the academic age, namely, the number of years elapsed since earning a Ph.D. (or equivalent degree) up to 2007. We could not find information about a person's education and/or publications in 50 cases. Therefore, the initial sample consists of 2,705 economists.

4. We register the information available in Internet (personal web pages, *RePEc*, *Publish or Perish*, etc.) concerning the publications up to 2007 of these 2,705 people. Because of budgetary restrictions, our information suffers from two limitations. Firstly, the article count in our dataset made no distinction between single and multiple-authorship. Consequently, no correction for co-authorship could be implemented. Secondly, it was impossible to search for the citation impact achieved by every article. Therefore, we are constrained to measure productivity using the number of publications and the journals where they have appeared. Specifically, we measure productivity by a quality index Q that weights the number of articles published in four journal equivalent classes, denoted by A, B, C, and D. The weight system assigns 40 points to class A, 15 to class B, 7 to class C, and 1 to class D.[10]

[10] See Appendix I in the SMS for the alternative of measuring productivity by the total, un-weighted number of publications. For a complete listing of the five, 34, and 47 journals in classes A, B, and C, see Appendix II.

5. There are 175 faculty members without any publication at all (typically because they are on tenure track). The remaining 2,530 scholars with a positive quality index (or at least one publication) is a very productive sample: only 36.9% have no class A publication, while 25% published once or twice, and the remaining 38.1% published three or more times in the top journal class. The average productivity of this set of people is 307.3 quality points *per capita*, equivalent to more than seven articles of class A or about 20 articles of class B. Alternatively, the average quality index is 16.2 per year during an academic life (the period from the first year after receiving a Ph.D. up to 2007), a quantity that can be compared with the 15 points assigned to one article in class B.[11] In contrast, only 42.8% of European academic economists published at least once in *EconLit* during 1971-2000 (Combes and Linnemer, 2003), while only 39% of a sample of 1,600 economists graduating in the period 1969-1988 in the U.S. published at least one article, averaging 0.42 publications per year in 126 journals (Hutchinson and Zivney, 1995), and 122,889 researchers in Economics and Business published 0.25 articles per year during 2003-2011 (Ruiz-Castillo & Costas, 2014).

6. We fix the thresholds to select different types using the size- and scale-independent technique known as Characteristic Scores and Scales (CSS hereafter) introduced in Scientometrics by Schubert *et al.* (1987) to analyze the skewness of citation distributions. Let μ_1 be the mean of the productivity distribution; μ_2 the mean productivity of individuals with productivity above μ_1, and μ_3 the mean productivity of the individuals with productivity above μ_2. Consider the partition of the distribution into four broad classes: relatively low productivity, smaller than or equal to μ_1; intermediate productivity, between μ_1 and μ_2; remarkable productivity, between μ_2 and μ_3, and outstanding productivity above μ_3. Panel A in Table 1 includes the percentage of individuals in the four classes, as well as the percentages of the total quality points accounted for by each. The results clearly illustrate the high skewness

[11] By way of example, the following 12 journals are in class B: *Economic Journal*, *Games and Economic Behavior*, *International Economic Review*, *Journal of Econometrics*, *Journal of Economic Growth*, *Journal of Economic Theory*, *Journal of Finance*, *Journal of Labor Economics*, *Journal of Monetary Economics*, *Journal of Public Economics*, *Rand Journal of Economics*, and *Review of Economics and Statistics*.

characterizing the individual productivity distribution: the mean μ_1 = 307.3 is 17 percentage points above the median, and the top 11.5% of economists in the last two classes account for 43.6% of all quality points.

Table 1 around here

We should emphasize that this result closely resembles the available evidence on the skewness of science in many dimensions (see note 2 for references to this literature). By way of example, Panel B in Table 1 reproduces the results taken from Ruiz-Castillo & Costas (2014) for comparable distributions where individual productivity is measured as the number of articles published in the periodical literature in the period 2003-2011 in 30 broadly defined scientific fields. This article studies the productivity of 17 million authors, of which 132,336 belong to the Economics & Business field. As many as 65.8% economists publish only one article in this nine year period –a feature shared with all other fields (the average of this percentage over the 30 fields is 68.1%). Therefore, Ruiz-Castillo & Costas (2014) also study the so-called successful authors, namely, the 25,911 scholars publishing a number of articles above the mean, which is equal to 2.26 articles. The results for successful authors in Economics & Business, as well as the average for the 30 fields are reproduced in Panel B in Table 1.

The partition of authors into three classes –where authors with remarkable or outstanding productivity are included together in the third class– is remarkably similar to our own. Moreover, this partition is very similar to the average over the 30 fields. Finally, as documented in Ruiz-Castillo & Costas (2014), this is essentially the same partition that we find in other bibliometric contexts.[12] Thus, the high skewness of the individual productivity distribution in our set of 81 Economics departments is of the same type of what we find in the previous literature – a reassuring fact regarding the adequacy of this initial sample of 2,530 economists. In these circumstances, we

[12] Note that the set of scholars with a number of publications below (above) the mean in Economics & Business accounts for a relatively large (small) percentage of all articles. The same is the case for the average over all fields. However, recall that individual productivity in our case is not measured as the number of publications, but in terms of a quality index that weights publications in four equivalent classes according to a rather elitist weighting scheme. Therefore, the above situation is compatible with the fact that economists in our sample with a number of quality points below (above) the mean account for a relatively small (large) percentage of all quality points.

suggest working with elites characterized by an increasing productivity standard: (i) a group of 833 researchers with productivity above μ_1; (ii) the subset of 302 researchers among them with a remarkable productivity, that is, with Q above μ_2 = 707.4, and (iii) a final group of 111 researchers with outstanding productivity with a Q index greater than μ_3 = 1,165.2.[13]

7. Although these 833 people constitute an interesting starting point, it is very likely that we are missing other researchers that deserve to be part of the elite. Consequently, we search for economists that have received a high professional recognition. Following other contributions to the literature, we find it useful to focus on the set of Econometrics Society (ES hereafter) Fellows in 2007 that satisfies two conditions. Firstly, these scholars remain active in 2007 in the sense that they have some publications in the 2005-2009 period. Secondly, they are productive enough in the sense that their overall quality index is above the mean μ_1. Out of the 444 ES Fellows satisfying these criteria, 369 are already included in some of the original 81 Economics departments (some as Emeritus Professors). Among the rest, 34 are found in Business Schools, and 41 belong to some other institutions. Thus, our final total sample contains 2,605 economists, of whom 123, 332 and 908 belong to what we call Elite I, Elite II, and Elite III, respectively. These elites include 22, 9, and 6 scholars that have received a Nobel Prize up to 2007. On the other hand, all members of the American Academy of Sciences that satisfy the two criteria are also ES Fellows, and hence part of our elites.

8. As we will see below (Panel A in Table 4), approximately 69% of all economists in the total sample obtain their Ph.D. in the U.S. We should add that 12% have attended graduate school in the UK or Canada. Furthermore, the Ph.D. program in some of the remaining institutions in the EU or the RW is inspired in the type of program we find in these Anglo-Saxon countries. Thus, a vast majority of the total sample receives a very similar type of graduate education that typically combines mathematics, game theory, and econometric methods with neo-classical

[13] As explained in Appendix I in the SMS, an experiment where the quality index was defined using a less elitist weighting system of journal classes A to D convinced us that the more demanding construction with the above reported consequences was preferable.

economic theory and a wide set of applied fields. Consequently, they share a very similar methodological outlook, as well as a common view of what it takes for a piece of research to be of high quality.[14] Moreover, all individuals in the total sample belong to a subset of the best Economics departments of the world or are active members of the Econometric Society and, in comparison with the rest of the economics profession, their average productivity is very high indeed (see point 5 above). We conclude that, relative to the academic profession as a whole, the 2,605 economists in the total sample form a fourth elite in its own right. Therefore, together with the other three elites, the total sample will be systematically taken into account below in the study of the stylized features of the set of highly productive economists.

II.2. Some descriptive statistics

In this Sub-section, we briefly discuss some descriptive statistics for the total sample and the different elites.

• In the first place, the listing of the 85 types of institutions, together with information for each institution concerning the number of faculty members, the number of people without publications, and the remaining scholars' publications in classes A to D, is in Table A in Appendix III. The original 81 departments are distributed as follows: 52 in the U.S., 21 in eight members of the EU, and 8 in the rest of the world (RW hereafter) –five in Canada, two in Israel, and one in China. Consider the 2,705 faculty members in the 81 departments, including those without any publication, plus the 75 ES Fellows who are not in these departments. Of this total of 2,780 individuals, 62.1% belong to U.S. institutions, 30.6% to European institutions, and the remaining 7.3% to the RW. Contrast this with the proportions 39%, 31%, and 30% reported in Coupé (2003) for the 55,000 people belonging to the profession at large who contributed at least one article in 1994-98 to the Economics literature as captured in *EconLit*.

• In the second place, Table 2 includes some basic statistics concerning the gender and age characteristics of the different samples. It can be observed that the proportion of females decreases as we proceed towards the most

[14] For a review of several studies investigating whether studying economics influences beliefs and behavior, see Coupé (2004).

productive economists. They start at 13.7% in the total sample, but completely disappear when we reach Elite I. As far as the number of years since earning a Ph.D., it is quite clear that our productivity measure favors older people. The correlation coefficient between the quality index and the number of publications is 0.79, while the correlation between the latter and the number of years since earning a Ph.D. is 0.57. Thus, for example, people with at least 33 years since obtaining a Ph.D., which represent 17.4% of the total sample, end up representing 60.2% of Elite I. Under the assumption that, at the earliest, people finish a Ph.D. at the age of 25, this subset would be at least 58 years of age in 2007. On the other hand, people with at most 16 years since earning their Ph.D., that is, people who are at most 40 years of age in 2007, represent 46.4% in the total sample but only 4.0% in Elite I.

Table 2 around here

• In the third place, Appendix IV lists members of Elites I, II, and III ranked by their Q value, including their nationality (the country where they obtained the B.A.), and the university which they are associated to in 2007.

• Finally, to better understand the nature of our data, it is instructive to examine the partition of the economists in the total sample by their nationality. Countries can be partitioned into two groups, according to whether they have at least one of the 81 departments in the original sample or none at all. Nationals from each of the countries of the first group can be partitioned into those who work there in 2007, and those who are brain drained and work somewhere else in the world. In turn, nationals from countries with no department in the original sample can only belong to the brain drain category. Results are presented in Table 3.[15]

Table 3 around here

Two partitions must be discussed. The group of U.S. nationals presents no problem, since it belongs to both of them, constitutes the dominant country, and represents 39.1% of the total sample. The two partitions differ depending on how we treat Europeans and members of the RW belonging or not to countries that have at least one department among the 81 included in the sample. Firstly, recall that there are only eight countries in the EU and

[15] There are some exemptions, consisting of a few ESFs that do not belong to any of the countries of the first group but are working in 2007 in their own countries, that is, they are not part of the brain drain. They appear in Table 2 in row 13 within the first group.

three in the RW in the former situation, whose nationals represent 31.4% and 10.8% of the total, respectively. The remaining 18.7% are nationals from countries that have no department in the sample. This distribution illustrates the shortcomings of our construction. We are missing nationals from all over the world who, in spite of being very productive according to our own definition, have had no chance of being considered because they are not working in 2007 in the 81 departments included in our sample, or they are not ES Fellows. However, we believe that the total sample and the three elites we have isolated constitute a reliable set of top researchers that is inclusive enough to be of interest to everyone.

Secondly, consider the country where each individual is born, regardless of whether the country has or not at least one department in the sample. In the second partition, elite members are assigned to the geographical area of their country of origin. Naturally, the weight of the EU and the RW in this partition, namely, 37.0% and 23.9% of the total sample, is greater than in the previous one. The route through which this takes place is an increase in the brain drain component of both areas. This should be taken into account whenever we discuss the partition within any country or group of countries into stayers, brain circulation, and brain drain. Consider, for example, the RW. Stayers and brain circulation would necessarily come from Canada, Israel, or China –the only countries in this area with at least one department in the sample. However, the brain drain from the RW would include the nationals from these three countries that are working abroad in 2007, plus the nationals from any other country different from the U.S. or the 15 members of the EU who have no department in the sample and can only appear in this paper as part of the RW brain drain. Thus, both the EU and the RW include a different set of countries when we study stayers and brain circulation, or when we study the brain drain. As long as this is always taken into account, we do not need to complicate the notation to distinguish between two EUs and two RWs depending on the circumstances.

III. EMPIRICAL RESULTS

III.1. The funneling effect

The number of people classified by their nationality (or the country where they obtained their B.A.), the place where they obtained a Ph.D. (or a second university degree), and the current job in 2007 in the partition of the world into the U.S., the EU, and the RW is in Panel A in Table 4. The number of countries at every stage is equally classified in Panel B in Table 4. We emphasize the following two points.

Table 4 around here

1. In all samples, the data show a clear funneling effect towards the U.S., albeit with different intensity as we move towards the smallest elite. Beginning with the total sample, the percentage of people obtaining a B.A. in the U.S. is 39.1%. This percentage increases to 68.7% and 61.9% for people obtaining a Ph.D. and working in 2007 in the U.S. (Panel A in Table 4). A similar situation takes place in Elite III. However, in Elites II and I the percentage of scholars in the U.S. increases monotonically from the B.A., the Ph.D. and the current job in 2007. Figure 1 illustrates the situation in the total sample and Elite I.

Figure 1 around here

2. Another way of viewing the funneling effect takes into account the number of countries present at the three stages in every sample (Panel B in Table 4). Besides the U.S., the economists in the total sample belong to 61 different countries, obtained a Ph.D. in 24, and work in 2007 in only 20 countries. In Elite I, for example, these figures are 12, 6, and 6. Together with the 110 people working in the U.S., in this elite eight persons work in the UK, and only one in France, Sweden, Belgium, Canada, and Israel. The consequences of the funneling effect are illustrated in Figure 2, showing the percentage of people in the different samples working in 2007 in the three geographical areas.

Figure 2 around here

An interesting question is: how do the elites in Economics stand in relation to those of other scientific disciplines? As an alternative notion of elite, Panaretos & Malesios (2012) use the 250 most highly cited researchers (HCRs hereafter) during 1981-1999 in 21 broad scientific disciplines distinguished in the Web of Science. The

consequences of the funneling effect, namely, the percentage of scholars working in 1999 in the U.S. the EU, and the RW is in Figure 3, where scientific disciplines appear in descending order of the percentage of HCRs working in the U.S.

Figure 3 around here

Not surprisingly, the Social Sciences, Economics & Business, and Psychiatry & Psychology occupy the first three positions. In particular, the percentage of the 311 HCRs in Economics & Business working in 1999 in the U.S. is 86.1%. Two comments are in order, Firstly, this figure is very close to the percentage of economists in Elites III, II, and I working in 2007 in the U.S., which is 75.3%, 81.3%, and 89.4%, respectively (see Panel A in Table 4). It is reassuring that the distribution across geographical areas of our economic elites –based on the weighted number of publications in four journal classes– is so close to the distribution of the elite in Economics & Business in 1999 based on citation impact. Secondly, on average over all disciplines, only about two thirds of the 6,103 HCRs in Figure 3 work in the U.S. We must conclude that the dominance of U.S. institutions in our field is considerably stronger than in most other disciplines.

III.2. The clustering effect

Naturally, when we move from the total sample towards Elite I involving ever fewer people, the number of educational and research institutions in all geographical areas decreases. At the same time, when we move from the B.A. to the Ph.D. and the current job in 2007, the number of institutions in each sample also decreases (Table C in Appendix III). However, the proportion of U.S. institutions at every stage keeps increasing as we move towards Elite I. That is to say, the smaller the elite size, the more prevalent the role of U.S. institutions is. The situation in Elites III and I is illustrated in Figure 4.

Figure 4 around here

As a matter of fact, a large part of this clustering of institutions takes place towards a rather reduced number of leading U.S. Economics departments. It is interesting to analyze this phenomenon in relation to the graduate education received by elite economists. Inspiring ourselves in Amir and Knauff (2008) –a contribution that ranks 58

Economics departments worldwide in terms of graduate education in 2006– we partition the people working in 2007 into four classes: (i) a selection of ten top Ph.D. granting institutions in the U.S.[16]; (ii) the remaining U.S. institutions; (iii) EU institutions, and (iv) institutions in the RW. For each class i in this partition, we compute the number of people who have obtained their Ph.D. in any of the institutions in this class, as well as in any of the other j classes with $j \neq i$. A summary of results for all samples is presented in Table 5 and Figure 5 (further details can be found in Table D in Appendix III).

Table 5 and Figure 5 around here

Three aspects of the clustering towards these top ten U.S. departments should be noted: the clustering of people working there in 2007; the concentration of Ph.D. graduates in these top institutions among the elite in the three geographical areas; and the relative insularity of people that work in 2007 *and* obtain their Ph.D. in these ten universities.

1. As we move from the total sample to the more selective elite, the scholars working in 2007 in the top ten U.S. institutions represent an increasing percentage of the total: from 15.8% in the total sample to 58.5% in Elite I (Figure 5.A).

2. The percentage of elite economists of all sorts trained in these ten U.S. departments goes from almost 50% in the total sample to two thirds in Elite I. The degree of inbreeding among the elite, and the special role of the two graduate schools training the largest number of scholars –Harvard and MIT– are impressive (Figure 5.B).

3. Finally, we study the degree of insularity experienced by the subset of scholars working in 2007 in the top ten U.S. departments. The percentage that has obtained a Ph.D. in some of the same institutions is very similar in the four samples (ranging from a minimum 78.3% in the total sample to a maximum 80.9% in Elite III). Note, however, that this inbreeding is a collective phenomenon not present at the individual departmental level. We do not have complete information on the entire academic career of every individual but, whenever possible, we have

[16] Nine of these departments also occupy the first nine positions in the Econphd ranking. The tenth, the University of Minnesota, ranked 29th in Econphd, has been selected among the top ten in this Section because of the high number of its Ph.D.s among the elite. It should be noted that these top ten departments coincide with the top ten in Amir and Knauff (2008).

recorded where the 2,605 economists in the total sample hold their first job immediately after obtaining a Ph.D.[17] The percentage of people in the total sample studying a Ph.D., holding their first job, and working in the same university in the U.S. is a rare event affecting only 1.7% of the people with a U.S. job in 2007. Interestingly enough, because some leading universities in our dataset break this rule in 20 cases, this percentage for the top ten U.S. departments is raised to 4.6%.[18]

This trend contrasts with what we find among the members of the elite working in the EU. On the one hand, it is known that a large number of people in the EU conduct their academic career within their own countries. As a matter of fact, a large percentage of them typically work in the same university where they obtained their Ph.D. Among the highly productive scholars studied in this paper, the situation is the following. In the total sample, we confirm that people working in 2007 in the EU having attended graduate school in that area is very high: 71.9%. Even in this selected sample, those studying a Ph.D., holding their first job, and working in the same university in the total sample represent 16.0% of the total –a much larger percentage than in the U.S. On the other hand, the number of people working in 2007 in the EU that have obtained their Ph.D. in the U.S. increases as we proceed towards more restrictive elite notions. Consequently, contrary to what is observed in the U.S., the extent of the European insularity declines: the percentage of economists working in the EU in Elites III, II, and I that have obtained their Ph.D. in the EU is 69.4%, 60.4%, and 54.5%, respectively (row 5 and column 3 over the total in column 3 in Table 5). At the same time, an increasing number of people with a Ph.D. from the EU form part of the brain drain to the U.S.: from 18.1% in the total sample up to 70% in Elite I (row 5 in columns 1, 2, and 4 over the total in row 5 in Table 5).

Finally, an interesting question that we already asked in the previous Sub-section is: how do the elites in Economics stand in relation to those of other scientific disciplines? The availability of comparable data is very

[17] In 429 cases, we could not explicitly find this information in peoples' CVs. However, in 245 cases we used the university to which they belong when they publish the first working paper or professional article as the first job university. The remaining 184 economists have a missing value in this variable.

[18] It should be said, however, that some of these 20 people have left these universities for extensive periods of time after holding a first job there for only a few years.

limited. However, using the same source as Panaretos & Malesios (2012), Bauwens *et al.* (2008) analyze 5,597 HCRs in 21 disciplines who work in 1999 in 1,329 institutions all over the world. They report that the distribution of HCRs across institutions is very uneven. The median of the distribution is one, which means that the majority of institutions have a single HCR. At the other extreme, it is observed that the top 10 and 25 institutions account for 16.0% and 30.1% of the whole panel of HCRs, respectively.[19] In contrast, recall the situation in Elite II, a sample of 332 economists comparable with the approximately 250 HCRs per discipline in Bauwens *et al.*'s (2008) contribution. The percentage of economists in Harvard and MIT and in the top ten U.S. universities is 19.9% and 34.9% (Table 5). The conclusion is that the concentration of elite members in a handful of institutions is considerably greater in Economics than in all disciplines taken as a whole when the elite is formed by the most highly cited researchers.

On the other hand, Burris (2004) analyzes the 1,700 faculty members belonging to the 94 Ph.D.-granting departments of Sociology in the U.S. in 1995. He finds that the percentage of Ph.D.s from the top five departments is 32.0% over the total, and 55.9% over the researchers working in them. The situation in Sociology can be compared with the 1,465 economists in the 52 U.S. departments in the total sample (Table 5). The percentages of Ph.D.s from Harvard and MIT and from the top ten departments over the total are 22.0%, and 67.6%, respectively, whereas the percentage of Ph.D.s from the top ten departments over the researchers working in them is 78.3%. The conclusion is that the degree of collective inbreeding in Economics and Sociology in the U.S. is of the same order of magnitude.

Surely, this analysis should be carefully replicated in every science. In any case, the degree of departmental inbreeding found in many parts of the world requires little explanation. More troublesome is to determine whether the degree of collective inbreeding found in Economics and Sociology in the U.S. can be exclusively explained in terms of the meritocratic application of universalistic values. Burris (2004) finds that the performance of sociologists –measured in terms of articles weighted by the journals where they have been published– only explains

[19] The top 10 institutions in Table 2 in Bauwens *et al.* (2008) include eight U.S. universities together with the U.S. National Institutes of Health, and the Max Plank Institute; the next 15 institutions include 13 U.S. universities, NASA, and the University of Oxford.

about 50% of the variability in the ratings of graduate departments of Sociology reported in a National Research Council survey. Using the theories of Weber (1968) and Bourdieu (1986), this author goes on to argue that departmental prestige is an effect of a department's position within networks of association and social exchange – that is, a form of social capital. In this context, the exchanges of Ph.D.s among departments functions as the exchange of marriage partners in caste systems and similar status hierarchies as a mechanism of affirming and reproducing status divisions. However, the detailed discussion of the way the notion of social capital is operationalized, and the empirical strategy to establish the importance of this variable in explaining departmental prestige are beyond the scope of this paper.

III.3. Geographical mobility

Geographical mobility is a key characteristic of all sciences. Our information concerning this phenomenon in Economics is limited but interesting. We only use the country where people obtain a B.A. (or where they are born), as well as the country where they obtain a Ph.D., and the country where they work in 2007. Therefore, any move that takes place during the period between obtaining a Ph.D. and 2007 is ignored.[20] This means that we cannot separate permanent migration from temporary mobility. Nevertheless, with this information we can distinguish between the following five types of people. Firstly, we have economists completing all their studies and working in the same country; they are referred to as *stayers*. Secondly, there are those who study their Ph.D. abroad but come back to the country of origin, which are classified as *brain circulation*. Thirdly, there are three groups that will be considered as part of the brain drain because they work in 2007 in a different country than the one where they originate. (i) *Regular migrants* stay abroad in 2007 in the same country where they obtained a Ph.D. (ii) *Late migrants* migrate after earning their Ph.D. Finally, (iii) *frequent migrants* obtain the two degrees and work in 2007 in three different countries.

[20] For simplicity, in this Sub-section we do not use the information we have collected concerning the institution where the individuals hold their first job.

There are three interesting issues. Firstly, how does the distinction between movers and stayers evolve in the different samples, both in the aggregate and within geographical areas? Secondly, we already know that the funneling and a clustering effect towards U.S. institutions gain strength as we proceed from the total sample to the more restrictive subsets (Figures 1 to 5). The question that remains is: how does the distinction between nationals and foreigners evolve within the contingent of economists working in the U.S. in 2007? Thirdly, how does the partition into stayers, brain circulation, and brain drain differ across nationals from the different geographical areas? The partition between movers and stayers in all samples is in Table 6. But we also need the information about origins and destinations in the three geographical areas. A summary of results is presented in Table 7, where the total of brain drain and brain gain in columns 3 and 4 coincide in all samples (for the details, see Table E in Appendix III).

Tables 6 and 7 around here

1. More than 50% of economists in the total sample are stayers. However, this percentage steadily increases as we move towards the most productive economists: for example, in Elite I stayers represent 64.2% of the total (Table 6). Interestingly, the people in brain circulation always represent approximately 8% of the total in all samples. Therefore, the percentage of brain drain is the one that declines as we move from the total sample to Elite I. Since the percentage of late migrants remains constant, the steady increase in stayers is essentially offset by the decrease in the percentage of regular and frequent migrants.

The next question is whether this pattern characterizes all geographical areas. We begin with stayers. The percentage of stayers in the EU and the RW decreases by more than ten percentage points (Table 7). Therefore, as we focus on the most productive people, the key difference is that U.S. stayers increase from 36.2% in the total sample to 60.2% in Elite I (Table 7, and Figure 6.A). We finish with movers. Surprisingly enough, as illustrated in Figure 6.A, the U.S. brain gain represents practically the same 25% of the total number of economists in all samples

(approximately, 10-9% from the EU, and 15-16% from the RW).[21] Therefore, what decreases is the relative importance of the EU and the RW brain gain from 14.5% in the total sample to 2.4% in Elite I (Table 7).

Figure 6 around here

2. We know that, as we focus on the most productive people, the percentage of economists working in 2007 in the U.S. increases. Those working in the U.S. are either U.S. nationals (U.S. stayers plus U.S. brain circulation), or foreigners (U.S. brain gain). We have seen that the relative weight of U.S. stayers increases. On the other hand, brain circulation is a minority phenomenon in the U.S. Consequently, within the people working in the U.S. in 2007, foreigners represent a decreasing percentage: from 40.4% in the total sample to 28.2% in Elite I (Table 7, and Figure 6.B).

3. The partition of the people born in each geographical area into stayers and movers is very different in each area. As observed in Figure 7.A, the U.S. manages to retain most of its B.A.s for graduate work, as well as most of their Ph.D.s as faculty members in U.S institutions. The distribution into stayers, brain circulation, and brain drain in the U.S. remain very stable in all samples, with the former representing more than 92% in all cases. In the EU, brain circulation is an important phenomenon ranging from 14% to 21%, while the decrease in the percentage of stayers already noted is matched by an increase in the brain drain (Figure 7.B). A similar but even more drastic effect takes place in the RW where stayers, which represent 5% in the total sample, disappear in Elite I (Figure 7.C).

Figure 7 around here

III.4. The research gap between the U.S. and other geographical areas

A good part of the bibliometric literature in Economics has focused on the research gap between the output produced in the U.S. and the EU. Using a number of indicators including Nobel prizes, ESFs, publications, and citations, Drèze and Estevan (2007) conclude that Europe's research output amounts to some 15% to 25% of world output, versus 60% to 75% for the U.S., which implies a U.S./EU ratio of between four and three. In a similar vein, Ruiz-Castillo (2008) summarizes the situation as follows: although the gap between the U.S. and

[21] In this paper, the brain gain in a geographical area is equal to the brain drain from the other two.

Europe narrowed during the 1990s, the U.S. is still responsible for more than half the volume of worldwide production, and approximately two thirds of the total number of pages adjusted by differences in quality and other concepts published by the top 200 universities worldwide. At the end of the last century, the proportion represented by the United States among the top 200, 100, and 20 Economic departments in the world is 45%, 55%, and 95%, respectively. Finally, among the 22 broad fields studied in Albarrán *et al.* (2010), Economics & Business is one of the disciplines where the dominance of the U.S. over the EU is more overwhelming. When articles published in 1998-2002 are ordered by the citations received in 1998-2007, the share of publications authored by people working in the U.S. is greater than the share of articles in the EU at all citation levels; furthermore, the gap between the U.S. and the EU increases as we reach the upper tail of citation distributions.

It is worthwhile reviewing this evidence using our data on individuals' productivity in the different elites. The proportion of elite economists working in 2007 in the U.S. relative to those working in the EU is almost equal to two in the total sample, but it dramatically increases as we focus on the most productive scholars where it becomes 4.3, 6, and 10 in in Elite III, II, and I, respectively. Similarly, the ratio of the quality points accumulated in the U.S. relative to the EU increases from 4.2 in the total sample to 11.6 in Elite I (Table 8.A). Thus, the order of magnitude of the U.S./EU research gap is larger than what has been documented before using aggregate information for wider sets of economists, and increases as we focus our attention on the most productive economists in our dataset.

Table 8 around here

Table 8.A contains additional information concerning the clustering towards a handful of U.S. institutions, whose contribution to the total quality points increases systematically as we move from the largest to the smallest elite. The top ten U.S. departments contribute approximately one third of all quality points in the total sample, and end up contributing almost two thirds in Elite II, whereas Harvard and MIT, which contribute about 10% in the total sample, end up contributing almost 30% in Elite I. This is three times more than the contribution of the EU and the RW taken together. The situation is illustrated in Figure 8.A.

Figure 8 around here

However, part of the output produced in U.S. institutions should be attributed to the migrants constituting the U.S. brain gain. Thus, as indicated in the Introduction, we are also interested in the research gap that refers to the output achieved by the nationals originating in every geographical area regardless of where they work in 2007, distinguishing between whether they work in 2007 in their country of origin (stayers and brain circulation) or abroad (brain drain). The relevant information, which is presented in Table 8.B and illustrated in Figure 8.B, deserves the following three comments.

Firstly, consider the percentage contribution of the research done in U.S. institutions and the research achieved by U.S. born economists as we move from the total sample to Elite I in Tables 8.A and 8.B, respectively. The absolute increase is of the same order of magnitude. The difference is that, in the total sample, the percentage of quality points attributed to those working in 2007 in the U.S. as opposed to the percentage attributed to the U.S. nationals (stayers plus brain circulation) is 75.6% and 50.0%, respectively. The difference of 15.6 percentage points should be attributed to foreigners working in the U.S. Thus, as expected, as we focus on the most productive economists the research gaps between the U.S. and the EU or the RW illustrated in Figure 8.B –although increasing– are considerably smaller than in Figure 8.A.

Secondly, the increase in the U.S. nationals' contribution observed in Table 8.B and Figure 8.B should be attributed to the absolute and relative increase in the number of U.S. stayers reviewed in Section III.3. Similarly, given the relative constancy of the contribution by the brain drain from the EU and the RW, particularly to the U.S., as well as the constancy of the brain circulation in the two areas documented in Section III.3, the strong reduction of the non-U.S. contribution from 48.4% in the total sample to 32.6% in Elite I should be attributed to the strong reduction in the numbers and the research contribution of EU and RW stayers.

Thirdly, in order to appreciate the extent of the concentration of talent in a few U.S. institutions, note that the percentage of total quality points contributed by Harvard and MIT economists of all nationalities, which is four times smaller than the one by all non-U.S. scholars in the total sample (10.5% versus 48.2%), ends up being of the same order of magnitude for the two groups in Elite I (32.6% versus 29.9%).

III.5. A comparison between Economics and Mathematics

To study similar features of the elite in other sciences, we need individual information in different dimensions. Fortunately, Panaretos & Malesios (2012) have information on the nationality, graduate education, and place of work in 1999 for 337 HCRs in Mathematics. Thus, it is possible to compare their dataset with our Elite II consisting of 332 economists. We begin by studying the partition of the elites into the three geographical areas according to where the B.Sc. or the B.A. is obtained, as well as the funneling and the clustering effects. The situation is illustrated in Figure 9.[22]

Figure 9 around here

1. As observed in Figure 9.A, there is an almost uniform distribution of mathematicians by the geographical area where the B.Sc. is obtained, i.e. by nationality for our purposes.[23] Specifically, there are 36.4% and 27.8% born in the EU and the RW among mathematicians, while these figures are 22.0% and 20.2% among economists –a considerable difference.

2. However, as we move towards the Ph.D. and the current job in 1999, the funneling effect towards the U.S. is clearly established (left-hand side of Figures 9.A, B, and C). As we know, this effect is considerably stronger among economists at every stage (right-hand side of Figures 9.A, B, and C).

[22] The numerical information concerning the connection between origins, graduate studies, and current job for both the HCRs in Mathematics and the economists in Elite II is available in Table F in Appendix III.

[23] Although Panaretos & Malesios (2012) have data on country of birth, for comparison purposes we will identify the mathematicians' national origin with the place where they obtain a B.Sc. The percentage of people who obtain a B.Sc. in the same area where they are born in the U.S., the EU, and the RW is 96%, 91.5%, and 90%, respectively. However, the information concerning the geographical area where the B.Sc. is obtained covers only 313 researchers.

3. The number of non-U.S. mathematicians is considerably greater than the number of non-U.S. economists within the corresponding elites. However, mathematicians born in the EU or the RW are less attracted by U.S. graduate schools than their counterparts in Economics. Alternatively, relative to the U.S., European Ph.D. programs are much more competitive in Mathematics than in Economics (Figure 9.B). On the other hand, the clustering of current jobs towards a handful of U.S. institutions is also less pronounced among mathematicians. In particular, the percentage of scholars working in the top ten U.S. departments is 26.2% for mathematicians and 43.5% for economists (Figure 9.C).[24]

Next we study two aspects of the distinction between movers and stayers. Firstly, as in Economics, brain circulation and brain drain is a minority phenomenon in the U.S. Therefore, we focus on the distinction among those born in the EU and the RW taken together. As illustrated in Figure 10.A, there are more movers (brain circulation plus brain drain) than stayers in both elites.[25] However, this difference is greater among economists who have six percentage points more than mathematicians in each of the brain circulation and brain drain categories. Secondly, given the concentration of scholars currently working in the U.S., it is interesting to investigate the distinction among them between U.S. nationals and foreigners (or brain drain from the EU and the RW towards the U.S). We have seen that the relative importance of brain drain is somewhat smaller among mathematicians than among economists. However, recall that there are considerably more mathematicians than economists born outside the U.S. The end result is that the percentage of foreigners in the U.S. is 50.9% in mathematics, and 30.7% in Economics (Figure 10.B).[26]

Figure 10 around here

IV. THE YOUNG ECONOMISTS

[24] Seven out of the top ten universities are the same in the two disciplines.

[25] It should be noted that in the Mathematics sample we were not able to distinguish between brain circulation and the U.S. brain drain that takes place after obtaining a Ph.D. at home (i.e. late migrants to the U.S.). However, the latter should constitute a negligible phenomenon.

[26] Hunter *et al.* (2009) analyzes a small sample of 158 highly cited physicists that can be compared with the 123 economists in Elite I. Not surprisingly in view of Figure 3 in Section III.1, the funneling towards the U.S. is stronger in Economics than in Physics. Since the percentage of U.S. brain gain is very similar in both disciplines, the main difference between the two fields is that the percentage of U.S. (EU) stayers in Economics is considerably greater (smaller) than in Physics.

To study the elite in Economics around the year 2030, we would have to proceed as we did in this paper, namely, selecting an initial pool of faculty members belonging to the top world departments at that date, focusing on those with above average productivity, and completing the sample with ES Fellows equally productive, active at that date, and working outside of these top departments.

Short of that, what we can do is to review the characteristics of a subset of young economists in our dataset. We restrict our attention to the economists that have obtained a Ph.D. less than 25 years before 2007. Assuming that people finish their Ph.D. when they are at least 25 years of age, young economists are, approximately, those with less than 50 years in 2007. We conjecture that a good part of them may belong to an appropriately selected elite in 2030.

IV.1. Descriptive statistics

We confirm that younger people are underrepresented in the original elites. Indeed, we find that the new total sample consists of 1,714 economists, or 65.8% of the original number, but the number of young people in the three elites represents 42.2%, 22.9%, and 18.7% of the original members in Elite III, II, and I, respectively. Similarly, the mean Q index is now 204.7, *versus* 323.4 in the original total sample. However, the average Q index per year before and after the elimination of older people is of the same order of magnitude: 14.1 and 16.6, respectively –a reassuring result about the comparability of the two samples from this perspective.

Appendix V lists the members of Elites I, II, and III ranked by their Q value, including their nationality, and the university which they are associated to in 2007. There are more women among the young than in the original sample. Recall that in the original case there were no women in Elite I, while the percentages of women in the total sample, Elite III, and Elite II were 13.7%, 5.3%, and 1.8% (see Table 2). Among the young, these percentages are 18.0%, 9.8%, 3.8%, respectively. Finally, given how pervasive is what has been called the skewness of science (see *inter alia* Seglen, 1992, Albarrán *et al.*, 2011a, and Ruiz-Castillo & Costas, 2014), it comes as no surprise that the skewness of the productivity distribution for the total sample before and after the elimination of the older people is

of the same order of magnitude.[27]

IV.2. Empirical results

Given the small size of Elites II and I for the young, in the sequel we briefly compare some of the characteristics of the new total sample and the new Elite III with the corresponding samples in Section III. In particular, we summarize the results concerning the following five issues: the funneling effect; the clustering effect towards U.S. institutions; the distinction between movers and stayers, and the research gap. This favors the U.S. The information about these issues in the original case is in Tables 4, 5, 7, and 2 in Section III. The corresponding information for the young is in Tables G to I in Appendix III. The comparison of these characteristics among the original samples and the young people is summarized in Table 9.

Table 9 around here

• Table 9.A. The percentage of U.S. nationals in the original situation is 11.3% smaller than among the young. The European countries with and without at least one department among the 81 in our sample increase by 5.8% and 2.1%, respectively. Finally, the countries from the RW with no department at all in this list generate the remaining increase of 3.4%.

• Table 9.B. The funneling effect towards the U.S. is even stronger after eliminating older people: the difference between the proportion of economists working in 2007 in the U.S. and the proportion of U.S. nationals is now equal to 27.8% and 34.2% in the total sample and Elite III, while these differences are 22.8% and 24.9% in the original case.[28] However, there is an important difference between the two situations: in the total sample and Elite III among the young there are 6.6% and 4.5% more people working in the EU than originally. This increase is mostly offset by a similar reduction in the people working in the U.S.

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[27] The percentage of economists in categories 1, 2, and 3 + 4 in Panel A in Table 1 were 67.1/21.4/11.5, and are now 65.5/23.3/11.2. Similarly, the percentage of quality points accounted for by categories 1, 2, and 3 + 4 were 24.2/32.2/43.5, and are now 24.0/35.1/40.9.

[28] Another way of assessing the funneling effect is by observing the number of countries at every stage in the partition of the world into the U.S., the EU, and the RW (compare Panel B in Table 3, and Table G in Appendix III). The reduction in the number of countries where economists obtain a B.A., a Ph.D., or work in 2007 in the total sample and Elite III is of the same order of magnitude before and after eliminating the older economists.

• Table 9.C. In Section III.3, we discussed several issues with regard to the clustering towards the top ten U.S. departments. To begin with, the proportion of people working in 2007, or obtaining a Ph.D. in these U.S. institutions in the total sample and Elite III are very similar before and after eliminating the older people. The dominant role of Harvard and MIT is also of the same order of magnitude. In the second place, the degree of insularity in the U.S., that is, the proportion of people working in 2007 in the top ten U.S. departments that obtained a Ph.D. from some of these institutions is again very similar indeed in the total sample before and after the age correction. The same is the case with regard to the degree of insularity in the EU. The only difference is that the degree of U.S. (European) insularity in Elite III is slightly greater (smaller) among the young than in the original situation.

• Table 9.D. The comparison of the geographic mobility before and after the elimination of the older people warrants the following two comments. Firstly, the trends between the total sample and Elite III are maintained as before. On one hand, stayers increase because the U.S. stayers do so while the EU and the RW stayers decrease. On the other hand, given that brain circulation remains essentially constant, movers go down because the brain drain decreases. Secondly, levels are drastically altered. Young U.S. stayers represent 10-12% less than before. This is offset by an increase in the brain drain and a slight increase in EU stayers.

• Table 9.E. As before, the ratio of the quality points attributed to people working in 2007 in U.S. institutions relative to the quality points attributed to people in the EU increases from 2.7 in the total sample to 3.7 in Elite III. However, these ratios in the previous situation were 4.2 and 5.4. Therefore, the U.S/EU research gap is considerably smaller than before. Given the constancy of the relative importance of the quality points in the RW, the U.S./RW gap is also smaller than before.

• Table 9.F. Once we take into account the scholars' nationalities rather than where they conduct their research, the situation changes dramatically: the contribution by Europeans is greater than the one by U.S. nationals

in the total sample, while the contribution by the EU and the RW together represents 59.6% of the total quality points in Elite III. Essentially, the reduction of the contribution by U.S. nationals by, approximately, 15 percentage points is offset by an increase in the brain drain from the other two areas, mainly to the U.S. by, together with a small increase of the contribution by Europeans working in 2007 in the EU.

V. SUMMARY, DISCUSSION, AND FURTHER RESEARCH

V.1. Summary and conclusions

Given what Seglen (1992) has called the skewness of science, the dominance of U.S. institutions in every scientific discipline, and the importance of spatial mobility, the study of the national origins and other characteristics of elite scientists constitutes a key topic in the understanding of the workings of the academic profession in any discipline.

Admittedly, the definition of the elite is a delicate issue. In this paper, we have introduced a procedure for identifying a set of nested elites in any scientific field, which consists of three steps. Firstly, select a pool of outstanding scholars belonging to the top world departments in the field. Secondly, choose an appropriate measure of individual productivity, and define several elites by applying the size- and scale-independent CSS technique. Thirdly, add to the elites so defined any set of equally productive researchers that, having received an important professional distinction, were not considered before because they work outside of the initial set of top departments.

In our case, we first select an initial pool of 2,530 faculty members that belong to 81 top Economics departments in the world, have some minimal information about their academic career up to 2007, and at least one publication in the periodical literature. Next, we distinguish between three elites by using different productivity thresholds, where individual productivity is measured as a quality index that weights the number of publications up to 2007 in four equivalent journal classes. Finally, we add 75 ES Fellows who belong to some other institution, are active in research around 2007, and have a quality index equal to or greater than the economists in the initial largest

elite. In this way, we end up with three elites consisting of 908, 332, and 123 scholars, as well as a total sample of 2,605 highly productive economists that constitutes a fourth elite in its own right.

This is, of course, a very peculiar sample. Recall, for example, that out of the initial list of 81 departments, 52 are in the U.S., 21 in eight members of the EU, and 8 in the RW. Naturally, the procedure for arriving to our elite notions summarized above can be justly criticized. However, we have established that the total sample shares some key features with comparable samples in Economics (Amir & Knauff, 2008), or in Economics & Business (Ruiz-Castillo & Costas, 2014, Panaretos & Malesios, 2012). Thus, we believe that the broad picture we have drawn is solid. The main findings in the paper can be summarized as follows.

1. Using aggregate information for larger sets of economists than our total sample, we knew from previous research about the following two trends. (i) The funneling effect from the country of first degree towards the U.S. and a few other countries where people hold a job around the year 2000. (ii) The clustering of those studying a Ph.D. or holding a current job in a handful of U.S. institutions. This paper has established the following three additional facts.

• Using our individual productivity datasets, we have found that these trends become stronger as we move towards the most selective elite. As a result, for example, of the 123 scholars in Elite I, 72 work in the top ten U.S. departments, 38 in other U.S. institutions, eight in the UK, and only one in France, Sweden, Belgium, Canada, and Israel. Out of these 123 people, 54 obtained a Ph.D. from Harvard or MIT, 46 from some other U.S. department, and 23 from an institution in the EU or the RW.

• Having information on origin and destinations, we have been able to analyze the flows of brain circulation and brain drain that take place in our samples. Thus, for example, out of the 110 economists in Elite I working in 2007 in the U.S., there are only 79 born in that country, whereas 13 are brain drained from the EU, and 19 from the RW. On the other hand, of the 13 people working in 2007 outside the U.S., eight are brain circulation, and one is brain drained from the RW to the EU.

• Among the elites in other scientific disciplines, the dominance of the U.S. in Economics constitutes a polar case. The proportion of elite members in Economics having born in the U.S., having obtained a Ph.D. in the U.S., or working in the U.S. is considerably larger than in other scientific fields.

2. As far as movers and stayers is concerned, the key aspects when we move towards the more selective elite are the increase in the role of U.S. stayers, and the constancy of the percentage over the total of the following three groups: brain circulation, late migrants, and foreigners working in 2007 in the U.S. The other side of the coin is the loss of importance of stayers born in the eight European countries and the three countries in the RW with at least one department in our sample, as well as the increasing inability of these eleven countries to attract eminent economists from anywhere else.

3. Elite II in Economics is comparable with an elite consisting of 337 highly cited mathematicians. The main difference is that the role of the EU and the RW is more important in Mathematics than in Economics. The percentages of EU and RW stayers and brain drain to the U.S. are both greater among elite mathematicians than among elite economists.

4. There are two research gaps we should be concerned with. In the first place, there is an enormous gap between the quality points contributed by people working in 2007 in the U.S. and those contributed by people working elsewhere. The former represents 75.6% of the total quality points in the total sample, and reaches 90.8% in Elite I. In the second place, we must take into account that part of the research in U.S. institutions is done by foreigners. Thus, although the gap between the quality points accomplished by U.S. nationals and those attributed to scholars born somewhere else increases as we focus on the most productive people, it is considerably smaller than the previous gap: the percentage of U.S. nationals' quality points increases from 51.8% in the total sample to 67.4% in Elite I.

5. The comparison between the situation before and after eliminating the older people yields very interesting results. On one hand, all trends from the total sample to Elite III are essentially maintained: the funnelling and the clustering effects, the proportion of stayers at the cost of movers, and the research gaps favouring the U.S. versus

either the EU or the RW all increase as we focus on the more productive scholars. However, the U.S dominance decreases throughout. The percentage of those working in 2007 in the U.S. and, above all, the percentage of U.S. nationals both decrease. This is mostly offset by an increase of EU stayers, plus an increase in the brain drain to the U.S. from EU and RW countries with no department in the list of 81 in our sample. Not surprisingly, the research gaps in Elite III before and after the elimination of the older people are drastically altered: the quality points attributed to the research done outside the U.S. increases from approximately 10% to 25%, while the quality points attributed to those born in the EU or the RW increase from less than 50% to 60%.

V.2. Discussion and further research

What can be said of this description of the elite in Economics? It can be argued that there are benefits in this situation both from a global point of view and from the perspective of the sending countries.[29] Firstly, highly talented scholars in any scientific discipline would tend to cluster seeking to inspire one another in mutually valuable ways. On the demand side, centers of world excellence would typically attempt to hire several outstanding researchers in as many areas as possible. In so far as this matching process works well –as it apparently does– the clustering of the best scientists might generate an externality effect on a limited number of privileged institutions. Even though most of these institutions are located in the U.S., this clustering is efficient, and should increase the flow of new knowledge and global welfare. Moreover, it should be noted that talented scholars cluster together in a voluntary way. Secondly, the new economics of the brain drain has recently emphasized that the increase in the expected value of an individual's human capital investment if s/he has migration as an option may lead, under certain conditions, to an increase in human capital investment that could translate into an increase in the country's highly-skilled capital stock and social welfare through different channels. One of the channels would be, of course,

[29] For a discussion of possible global and national effects of high-skilled international migration for sending and receiving countries, see Regets (2001), Commander *et al.* (2003), and Ali *et al.* (2007). For a discussion in terms of Hirshman's (1970) contrast between the logic of exit and the logic of commitment to making a better home, see Ellerman (2006).

what we have called brain circulation. Note, however, that this literature refers to the migration of highly educated individuals from developing to developed countries. We appeal to it here by analogy.[30]

On the other hand, a situation as the one described in this paper for Economics has been also criticized both from a global point of view and from the perspective of the sending countries. To begin with, we are observing the outcome of a process characterized by large differences in resources and the way the university system is organized in different parts of the world. In the words of three highly qualified economists –J. P. Neary, J.A. Mirrlees, and J. Tirole– on the occasion of a symposium about European Economic Association-funded studies, *"The studies thus paint a well-known but distressing picture of relatively inferior performance in Europe, reflecting the poor governance of most European universities and the limited role given to research criteria in their funding"* (Neary *et al.*, 2003, p. 1248). Therefore, it is likely that the degree of concentration of the best talent in the U.S. constitutes only a second best. Better governance and some additional resources in the EU and the RW may give rise to an improved global situation with an elite less concentrated in the U.S.

At the same time, it can be argued that the concentration of the best talent working and/or studying in a few U.S. universities has gone too far. Such concentration motivated the following comment from Jacques Drèze in a related context: "*It is thought provoking that worldwide economic research is being pursued under the leadership of a couple hundred university professors trained and employed by a handful of U.S. departments.*" (Drèze and Estevan, 2007, p. 286). As pointed out in Section III.2, one may question whether the degree of collective inbreeding found in the U.S. can be entirely explained in terms of meritocratic procedures. On the other hand, Oswald (2007a, p.2) has pointed out that great discoveries often come from unconventional ways of thinking. "*This makes me believe that dropping so many of Planet Earth's scientists into the same American part of the globe may make them worryingly homogeneous. Such intellectual homogeneity could, in the long run, be bad for scientific knowledge and thus for human welfare on our planet.*" Finally, from a sociological point of view, Laudel (2005) has emphasized that –at least for narrowly defined specialties– the consequences for any

[30] See *inter alia* the early theoretical papers by Mountford (1997), Stark *et al.* (1997, 1998), and Beine *et al.* (2001), the empirical contribution by Beine *et al.* (2008), and the volume edited by Özden & Schiff (2006) that includes a negative assessment of this literature by Schiff (2006).

country from losing elite members typically means that the national specialty becomes uncoupled from frontier science; quality standards might no longer be enforced nationally; the country may no longer be able to recruit or train the best young scientists in the field (a country needs elites to generate elites), and an important channel of communicating societal interests to those who govern the specialty gets lost. These consequences may apply as well to an entire field such as Economics.

An evaluation of these ideas would require plenty of empirical work. Particularly at the global level, evaluating the externality effect, the second best nature, the homogeneity danger, or the possible endogamy associated to the clustering of the best minds in a few institutions is an extremely difficult empirical task. In any case, it is understandable that the U.S. dominance –in different degrees– in all sciences, has preoccupied the scientific community and the political representatives of specific countries, as well as the EU authorities themselves. Just recall the Lisbon Strategy launched in 2000 to make the EU "*the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*" by 2010 –a date just past without much noise.

There are several illuminating contributions that attempt to explain this situation, and to draw the corresponding policy conclusions.[31] They all focus on the two factors already emphasized by Neary, Mirrlees, and Tirole: resources and governance. We have nothing to add at this point to the diagnosis and the policies suggested in those papers for pushing forward European science. However, we should point out that, judging from the novelties offered by our sample of "young people", perhaps the characteristics of the elite in 2030 are changing quite substantially in the direction of a reduction in the extraordinary U.S. dominance experienced so far. On the other hand, within the limits of the information contained in our dataset, it is possible to undertake further research to throw some light on some aspects of the problem that may help to draw specific policy measures. We will refer only to the following two possibilities.

[31] Ali *et al.* (2007), Bauwens *et al.* (2008), Aghion *et al.* (2008), Veugelers & Van der Ploeg (2008), and Drèze and Estevan (2009). Although these contributions are written from the EU perspective, their conclusions are possibly useful for other countries in the RW similarly worried about the extent of their own brain drain. For the Israeli case, see Ben-David (2008).

1. The skewness of individual productivity we have documented in Table 1 calls for an explanation. Obvious candidates for explanatory variables are demographic characteristics –such as gender and age– and career variables based on the information on the universities where researchers obtain a Ph.D., hold a first job, and are working in 2007. Closer to the issues relating to the spatial mobility of elite members, there are two questions worth investigating. Firstly, we have the classical problem posed by Hunter *et al.* (2009): given the costs of switching between countries because cultural differences, costly travel, or poor communication, are migrants on average more productive than stayers in the U.S.? Secondly, it has been argued that migrants are positively self-selected, but that returned migrants are negatively self-selected.[32] Given the importance of migration in the EU, one would like to test whether on average the productivity of the EU brain drain is greater than the productivity of the EU brain circulation, and whether the latter is greater than the productivity of EU stayers. These are some of the topics investigated in our companion paper Albarrán *et al.* (2014c).

2. A necessary condition for the formulation of policy proposals is to recognize the heterogeneity within the EU (and the RW). Once, for example, the EU is broken down into its member countries, resources and governance are again the key terms for explaining the differences between European elites. However, recall that only eight European countries have at least one Economics department in our sample. Moreover, except for the UK, The Netherlands, and Spain, the remaining five countries' representation in the world elite is quite limited. Therefore, in order to make any progress, we need to incorporate as many new departments as necessary to construct in any country an elite proportional to the country's demographic weight. This task, as well as the investigation of differences between the national elites in four large continental countries –Germany, France, Italy, and Spain– is left for further research.

We should finish with the following observation. Given the skewness of the citation distribution of articles in any journal, including an important percentage with zero citations, it is not wise to judge the quality of individual publications –as we have done in this paper– by the citation impact of the journal where they have been published

[32] See *inter alia* Lam (1986), Borjas (1987), Borjas & Bratsberg (1996), and Cohen & Haberfeld (2001).

(Seglen, 1992). Similarly, Oswald (2007b) has shown that "*It is better to write the best article published in an issue of a medium quality journal such as the Oxford Bulletin of Economics and Statistics than all four of the worst four articles published in an issue of an elite journal like the American Economic Review*." Therefore, one way to improve upon the results presented in this paper is to introduce productivity measures based on the citation impact directly achieved by each individual publication. Note, however, that the strategy followed in this paper of finding an initial pool of highly productive scholars, and defining successive elites within the total sample, is equally applicable to any improved productivity measure we are able to construct.

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Table 1. The skewness of productivity distributions

A. The case of the 2,530 economists in the top 81 departments with at least one publication in 2007 when productivity is measured by the quality index $\mathcal{Q}$

	Percentage of individuals in category:				Percentage of quality points accounted for by category:			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Quality index, $\mathcal{Q}$	67.1	21.4	7.1	4.4	24.2	32.2	20.2	23.4

Category 1 = individuals with low productivity, smaller than or equal to μ_1 = 307.3
Category 2 = individuals with an intermediate productivity, above μ_1 and smaller or equal to μ_2 = 707.4
Category 3 = individuals with a remarkable productivity, above μ_2 and smaller or equal to μ_3 = 1,165.2
Category 4 = individuals with an outstanding productivity above μ_3,

where: μ_1 = mean of the productivity distribution;
μ_2 = mean productivity of individuals with productivity above μ_1,
μ_3 = mean productivity of individuals with productivity above μ_2.

B. The case of Economics & Business and other scientific fields in Ruiz-Castillo & Costas (2014) when productivity is measured as the number of articles per author. Successful authors with productivity above the mean

	Percentage of individuals in category:			Percentage of total articles accounted for by category:		
	1	**2**	**3**	**1**	**2**	**3**
Economics & Business	68.7	20.8	10.5	43.3	27.8	28.9
Average over 30 fields	71.4	19.8	8.8	41.4	27.4	31.1
Std. deviation	2.4	1.7	1.1	4.1	1.5	3.5

Table 2. Demographic characteristics for different samples

	TOTAL SAMPLE		ELITE III		ELITE II		ELITE I	
GENDER	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Female	358	13.7	48	5.3	6	1.8	0	0

	TOTAL SAMPLE		ELITE III		ELITE II		ELITE I	
AGE FROM PH.D	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
≤ 16	1,224	46.9	133	14.6	16	4.8	5	4.01
17 – 32	930	35.7	483	53.0	156	46.7	44	35.7
33 – 40	326	12.5	197	21.6	107	32.0	45	36.6
> 40	129	4.9	98	10.8	55	16.5	29	23.6
Total	2,609	100.0	911	100.0	334	100.0	123	100.0

Table 3. Nationalities in the total sample

	Current job in 2007	Brain drain	Total	Percentage distribution
	(1)	(2)	(3)	(4)
A. Countries with some department in the sample				
1. U.S.	960	58	1,018	39.1%
European Union	512	308	820	31.4%
2. UK	143	80	223	
3. France	73	55	123	
4. Netherlands	105	15	120	
5. Spain	83	33	116	
6. Germany	17	69	86	
7. Belgium	33	27	60	
8. Denmark	32	17	49	
9. Sweden	24	12	36	
Rest of the World	100	181	281	10.8%
10. Canada	45	79	124	
11. Israel	35	48	83	
12. China	9	54	63	
13. Econ. Society Fellows [a]	13	-	13	
B. Countries with no department in the sample		486	486	18.7%
14. Italy		101	101	
15. India		66	66	
16. Other countries [b]		173	173	
TOTAL		-	2,605	100.0%

[a] EU: Finland (1), Italy (1); RW: Japan (7), Brazil (1), India (1), Norway (1)

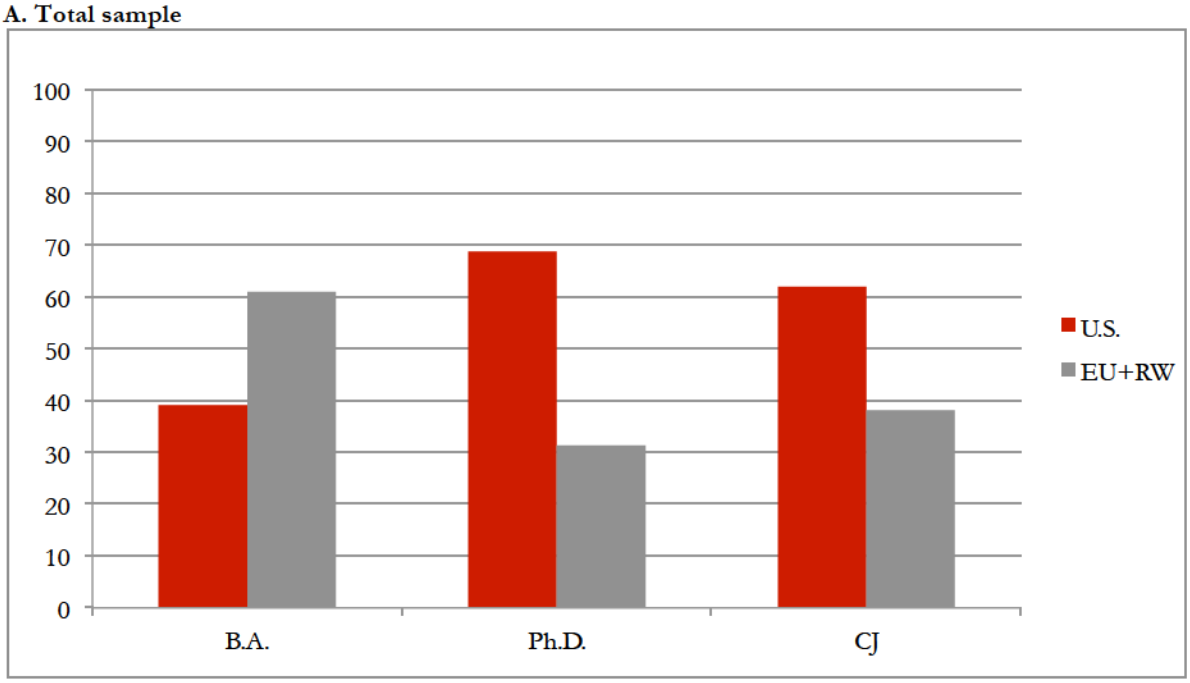
[b] Turkey (30), Argentina (27), South Korea (27), Australia (25), Japan (24), Russia (19), Greece (15), Brazil (14), Switzerland (12), Portugal (10), Austria (9), Hungary (9), Chile (8), Ireland (8), México (8), Poland (7), Colombia (6), New Zeeland (6), Uruguay (4), Ukraine (4), Egypt (3), Finland (3), Iran (3), Jamaica (3), Norway (3), Perú (3), Taiwan (3), Belarus (2), Costa Rica (2), Singapore (2), South Africa (2), Armenia (1), Birmania (1), Bulgaria (1), Estonia (1), Ghana (1), Nigeria (1), Rumania (1), Slovenia (1), Uzbekistan (1), Venezuela (1).

Table 4. The funneling effect for a partition of the world into the U.S., the European Union (EU), and the Rest of the World (RW)

	Total sample			Elite III			Elite II			Elite I		
A. People	**B.A.**	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**
U.S.	1,019	1,790	1,612	458	702	684	192	263	270	81	100	110
EU	965	707	806	239	165	158	73	52	44	21	20	11
RW	621	107	187	211	40	66	67	16	18	21	3	2
Missing	0	1	0	0	1	0	0	1	0	0	0	0
Total	2,605	2,604	2,605	908	907	908	332	331	332	123	123	123
B. Countries												
(besides the U.S.)												
EU	14	12	10	14	11	10	10	7	8	5	3	4
RW	47	12	10	24	7	10	13	5	7	7	3	2
Total	61	24	20	38	18	20	23	11	15	12	6	6

CJ = Current Job In 2007

A. Total sample



B. Elite I

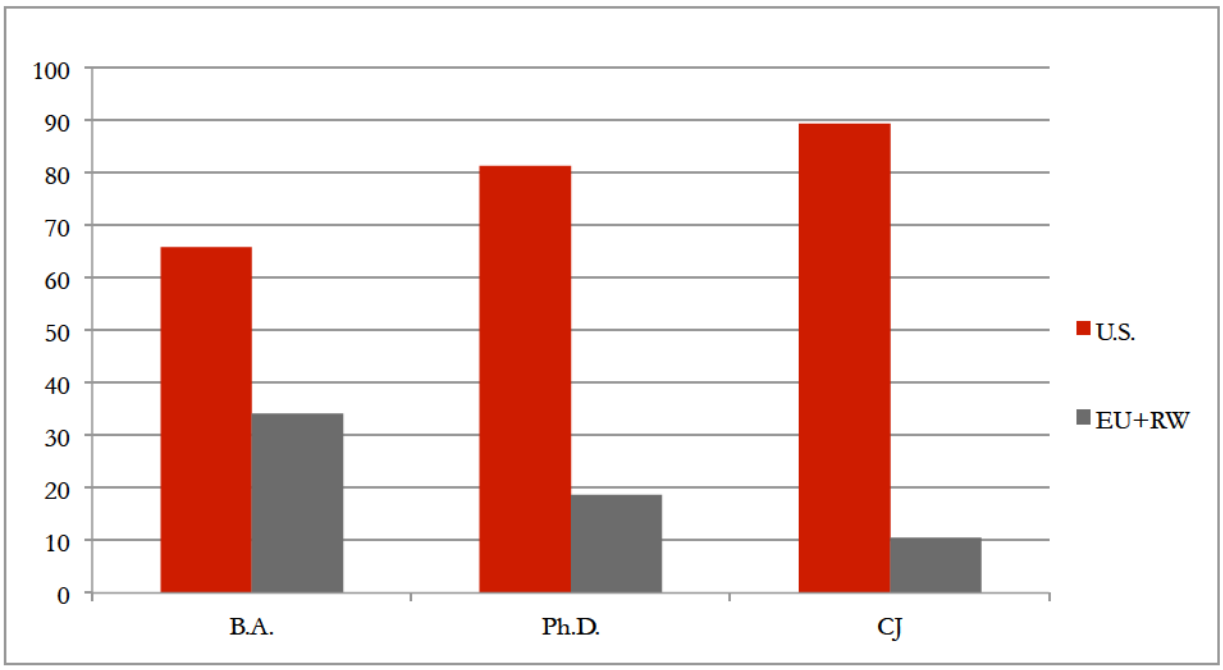


Figure 1. The funneling effect. Percentage of people in then total sample and Elite I obtaining a B.A., a Ph.D., and working in 2007 inside and outside the U.S.

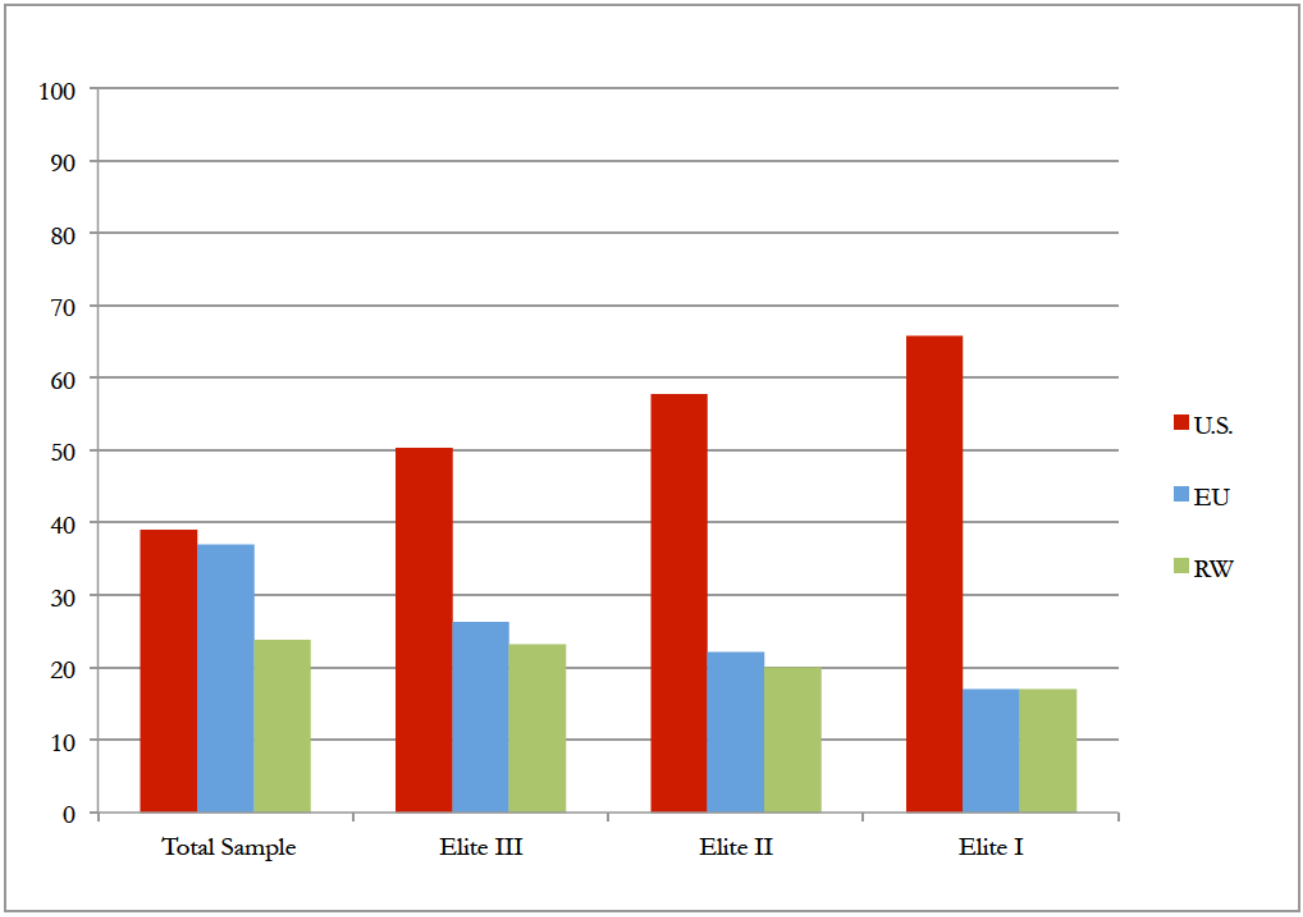
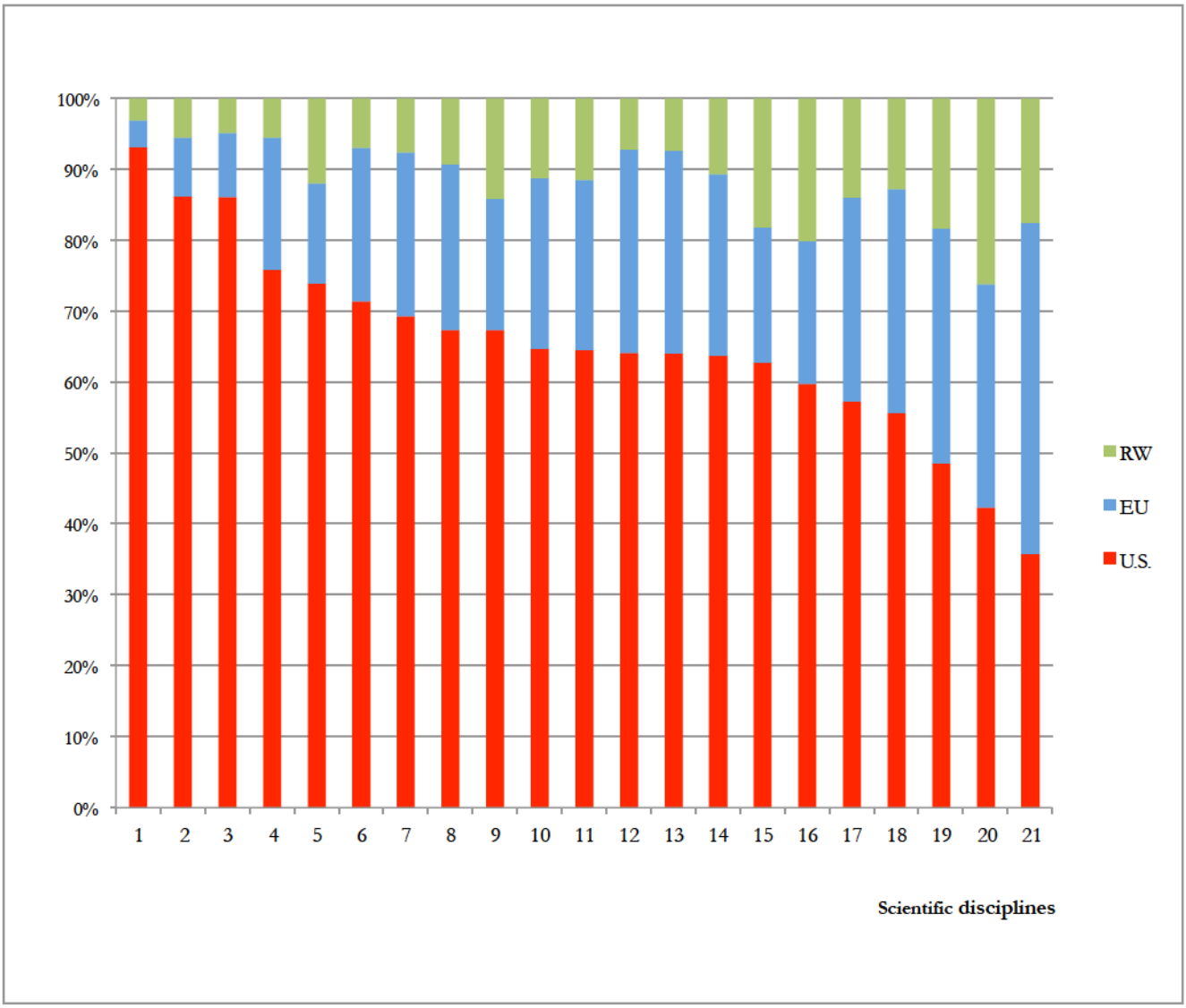


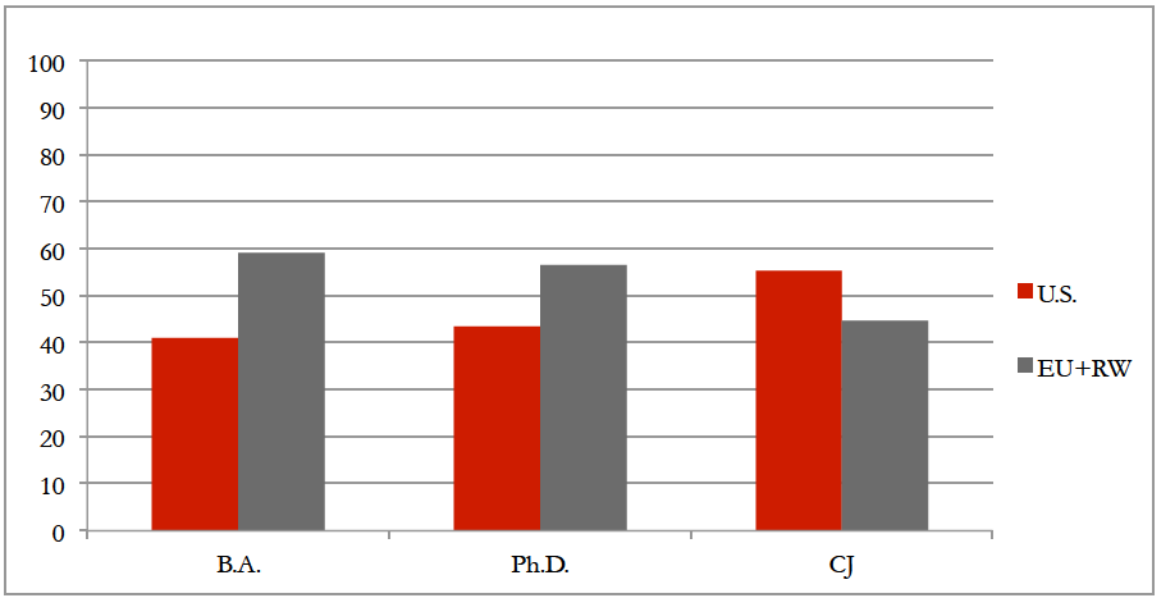
Figure 2. Consequences of the funneling effect. Percentage of people in different samples working in 2007 in the three geographical areas



(1) Social Sciences, General (2) Economics & Business (3) Psychology & Psychiatry (4) Clinical Medicine (5) Computer Science (6) Molecular Biology & Genetics (7) Geosciences (8) Mathematics (9) Engineering (10) Space Sciences (11) Ecology & Environment (12) Microbiology (13) Neuroscience (14) Immunology (15) Biology & Biochemistry (16) Materials Science (17) Chemistry (18) Physics (19) Plant & Animal Science (20) Agricultural Sciences (21) Pharmacology

Figure 3. Percentage distribution of the elite in different scientific disciplines working in 1999 in three geographical areas: the U.S., the EU, and the RW (Table 4.A in Panaretos & Malesios, 2012)

A. Elite III



B. Elite I

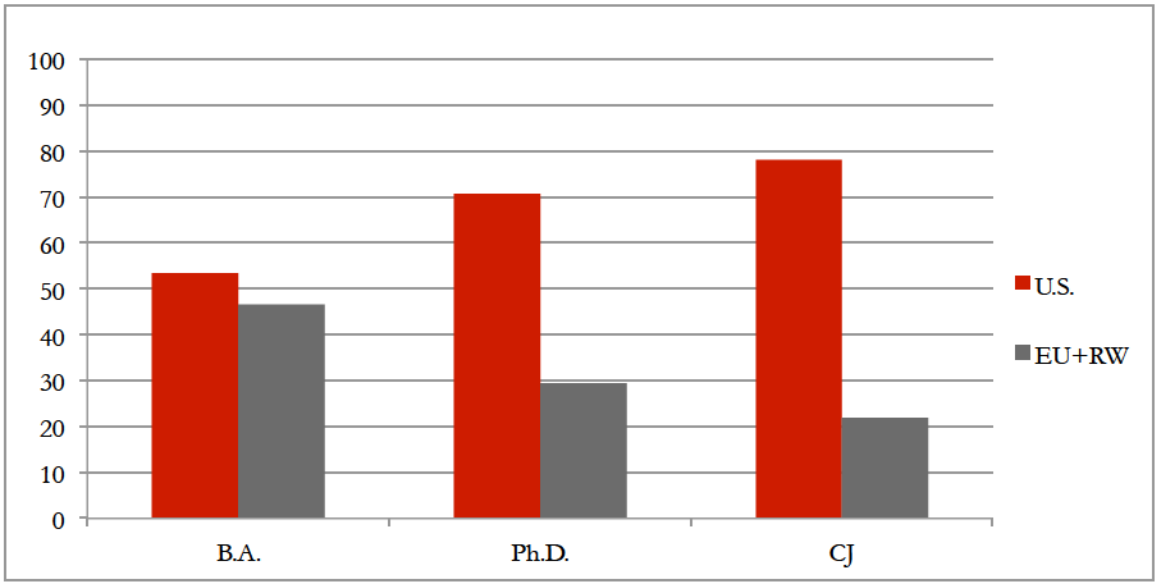


Figure 4. The clustering effect. Percentage of institutions in Elite III and Elite I where people inside and outside the U.S. obtain a B.A., a Ph.D., and work in 2007

Table 5. Institutions where elite university professors are trained

TOTAL SAMPLE. Current job in 2007 at:

Ph.D. obtained in:	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
1. Harvard	69	88	17	8	**182**
2. MIT	69	97	14	5	**185**
1 + 2 =	138	185	31	13	**367**
3. Rest Top Ten U.S.	183	485	88	82	**838**
4. Rest U.S.	60	414	79	32	**585**
TOTAL U.S.	381	1,084	198	127	**1,790**
5. EU.	26	88	579	14	**707**
6. RW	3	30	28	46	**107**
TOTAL	**410**	**1,202**	**805**	**187**	**2,604**

ELITE III. Current job in 2007 at:

Ph.D. obtained in:	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
1. Harvard	45	37	6	2	**90**
2. MIT	53	41	5	4	**103**
1 + 2 =	98	78	11	6	**193**
3. Rest Top Ten U.S.	113	175	20	20	**328**
4. Rest U.S.	33	126	12	10	**181**
TOTAL U.S.	244	379	43	36	**702**
5. EU.	17	33	109	6	**165**
6. RW		11	5	24	**40**
TOTAL	**261**	**423**	**157**	**66**	**907**

ELITE II. Current job in 2007 at:

Ph.D. obtained in:	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
1. Harvard	30	14	2		**46**
2. MIT	36	17	3	3	**59**
1 + 2 =	66	31	5	3	**105**
3. Rest Top Ten U.S.	50	42	6	3	**101**
4. Rest U.S.	18	35	2	2	**57**
TOTAL U.S.	134	108	13	8	**263**
5. EU.	10	12	27	3	**52**
6. RW		6	3	7	**16**
TOTAL	**144**	**126**	**43**	**18**	**331**

ELITE I. Current job in 2007 at:

Ph.D. obtained in:	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
1. Harvard	15	7	1		**23**
2. MIT	23	6	1	1	**31**
1 + 2 =	38	13	2	1	**54**
3. Rest Top Ten U.S.	19	8	0	1	**28**
4. Rest U.S.	6	10	2		**18**
TOTAL U.S.	63	31	4	2	**100**
5. EU.	9	5	6	0	**20**
6. RW		2	1		**3**
TOTAL	**72**	**38**	**11**	**2**	**123**

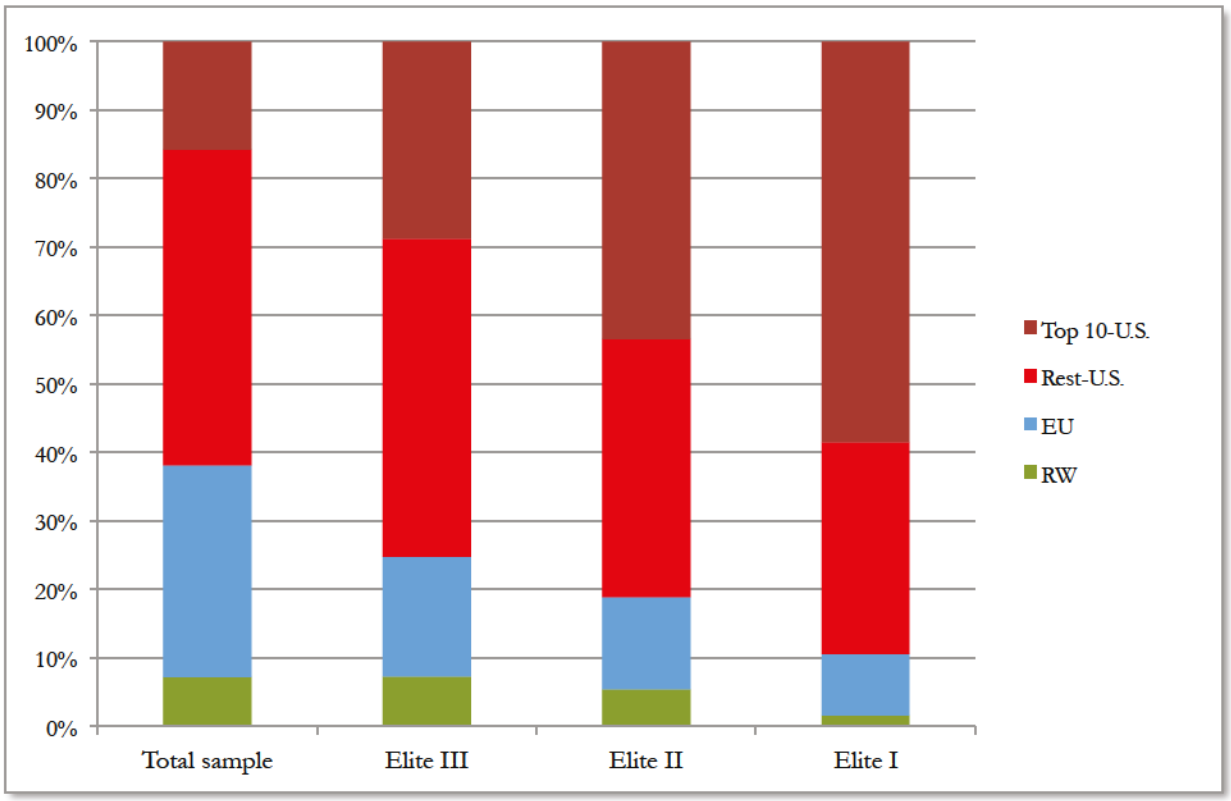


Figure 5.A. The clustering towards U.S. institutions in 2007 in different samples

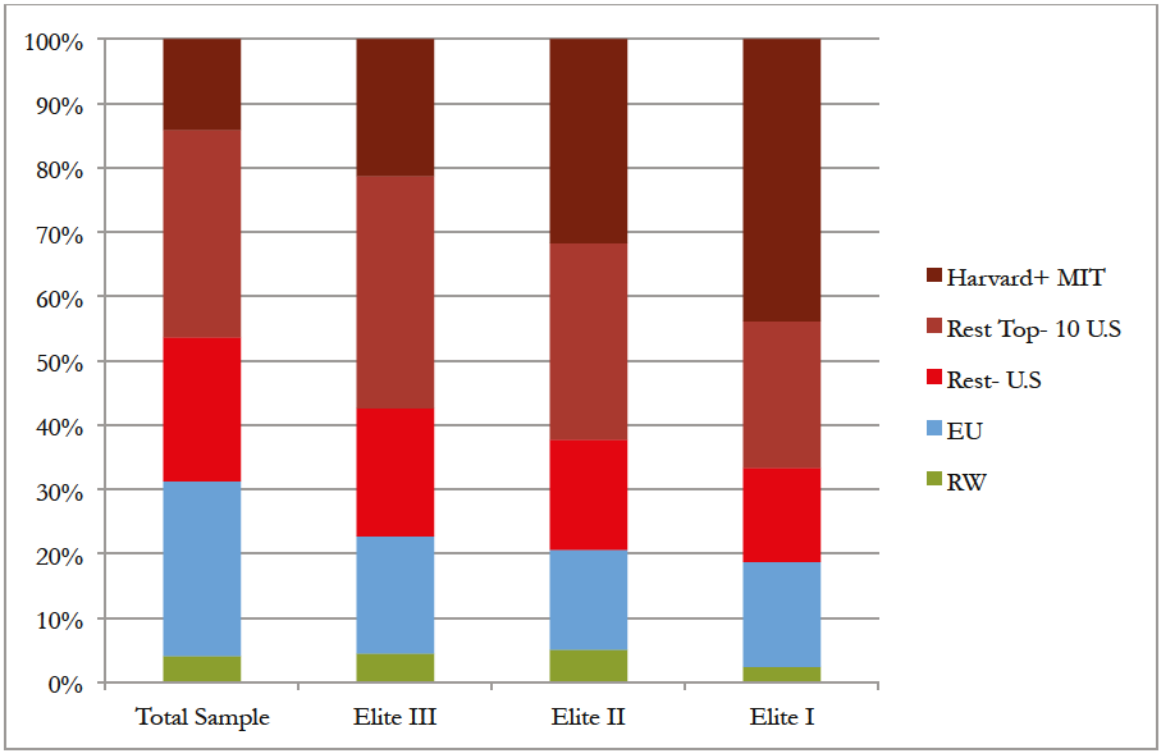


Figure 5.B. The types of graduate schools attended by economists in the different samples

Table 6. Geographical Mobility

	Total sample	Elite III	Elite II	Elite I
<u>Number of people</u>				
STAYERS	1,360	526	204	79
MOVERS:				
A. Brain circulation	215	76	26	10
B. Brain drain:	1,030	306	102	34
1. Regular migrants	592	206	65	20
2. Frequent migrants	236	37	11	3
3. Late migrants	202	63	26	11
TOTAL	2,605	908	332	123
<u>Percentage distribution</u>				
STAYERS	52.2	57.9	61.5	64.2
MOVERS:	47.8	42.1	38.5	35.8
A. Brain circulation	8.3	8.4	7.8	8.1
B. Brain drain:	39.5	33.7	30.7	27.7
1. Regular migrants	22.7	22.7	19.6	16.3
2. Frequent migrants	9.1	4.1	3.3	2.4
3. Late migrants	7.7	6.9	7.8	9.0
TOTAL	100.0	100.0	100.0	100.0

Regular migrants = Those who study the Ph.D. abroad but come back to hold a job in 2007 in the country of origin

Frequent migrants = Those who obtain a B.A., a Ph.D., and hold a job in 2007 in three different countries

Late migrants = Those who move abroad after the Ph.D.

Table 7. Partition of the people originating in each geographical area into stayers and movers (brain circulation and brain drain), and partition of those working in each area in 2007 into nationals (stayers and brain circulation) and foreigners (brain gain)

TOTAL SAMPLE

Area	Stayers (1)	Brain circulation (2)	Brain drain (3)	Total by origin = (1) + (2) + (3)	Brain gain (4)	Working in the area in 2007 = (1) + (2) + (4)
U.S.	943	17	58	1,018	652	1,612
EU	387	129	450	966	290	806
RW	31	69	521	621	87	187
TOTAL	**1,361**	**215**	**1,029**	**2,605**	**1,029**	**2,605**

ELITE III

Area	Stayers (1)	Brain circulation (2)	Brain drain (3)	Total by origin = (1) + (2) + (3)	Brain gain (4)	Working in the area in 2007 = (1) + (2) + (4)
U.S.	432	10	15	457	242	684
EU	77	37	126	240	44	158
RW	18	29	164	211	19	66
TOTAL	**527**	**76**	**305**	**908**	**305**	**908**

ELITE II

Area	Stayers (1)	Brain circulation (2)	Brain drain (3)	Total by origin = (1) + (2) + (3)	Brain gain (4)	Working in the area in 2007 = (1) + (2) + (4)
U.S.	181	6	4	191	83	270
EU	18	15	41	74	11	44
RW	6	5	56	67	7	18
TOTAL	**205**	**26**	**101**	**332**	**101**	**332**

ELITE I

Area	Stayers (1)	Brain circulation (2)	Brain drain (3)	Total by origin = (1) + (2) + (3)	Brain gain (4)	Working in the area in 2007 = (1) + (2) + (4)
U.S.	74	5	2	81	31	110
EU	5	3	13	21	3	11
RW	0	2	19	21	0	2
TOTAL	**79**	**10**	**34**	**123**	**34**	**123**

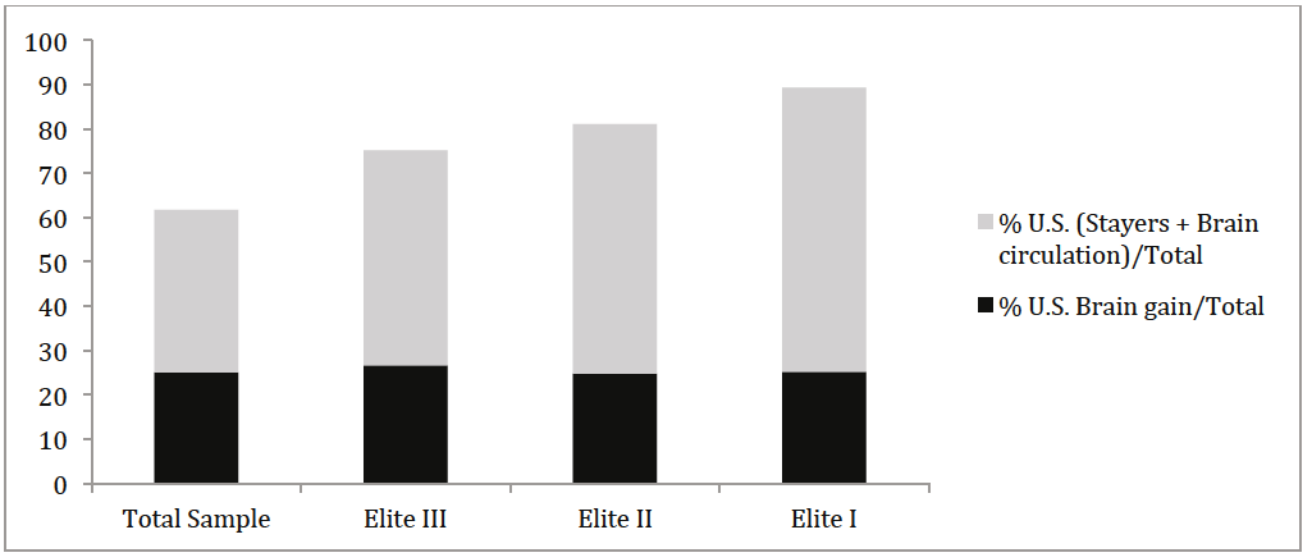


Figure 6.A. Percentage of U.S. nationals (U.S. stayers + U.S. brain circulation), and foreigners (U.S. brain gain) relative to the total number of economists in the different samples

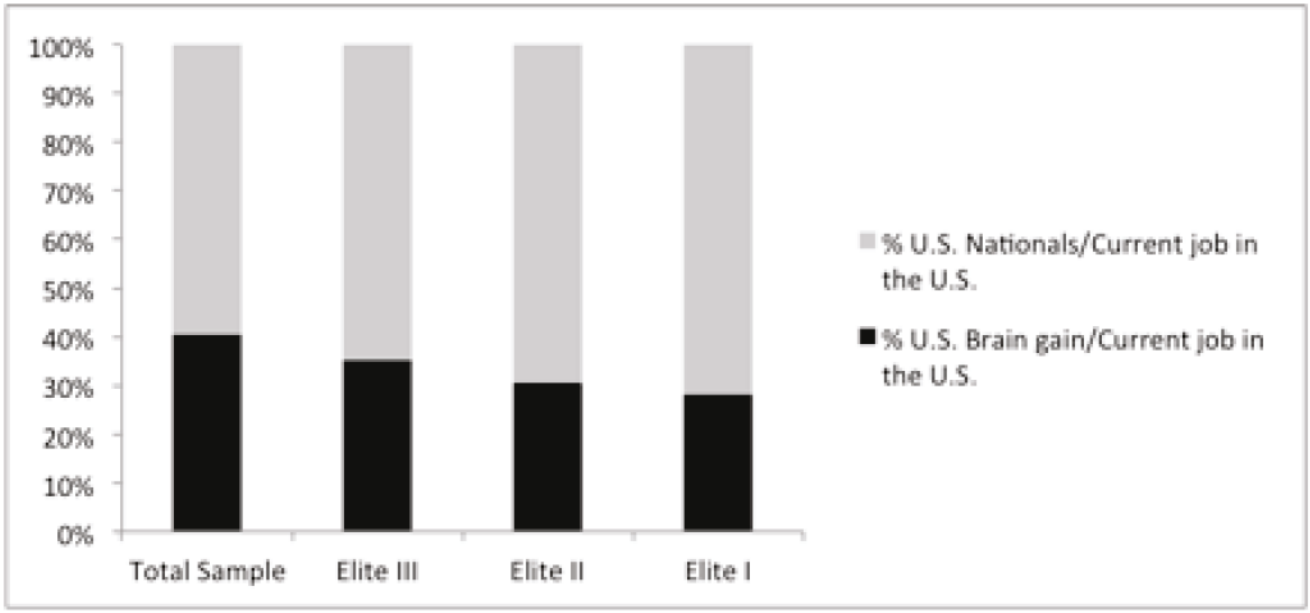
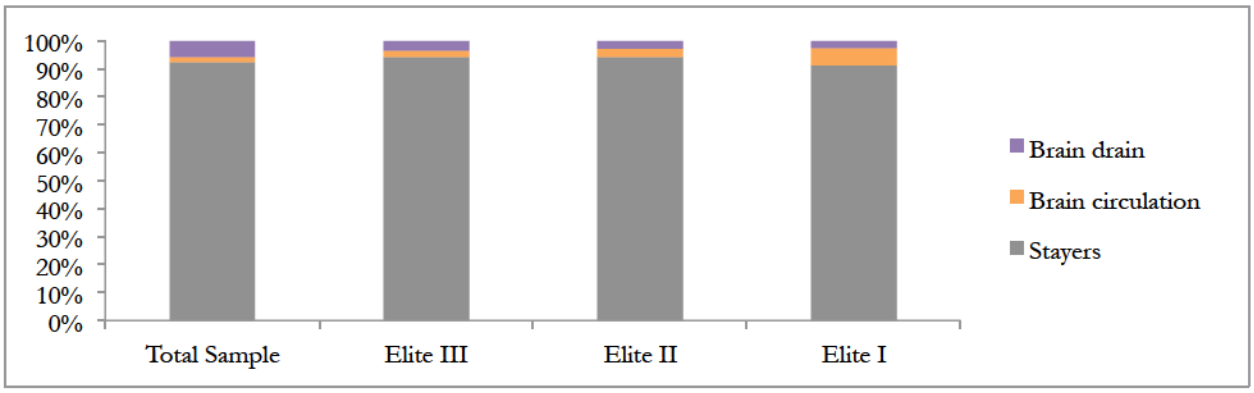
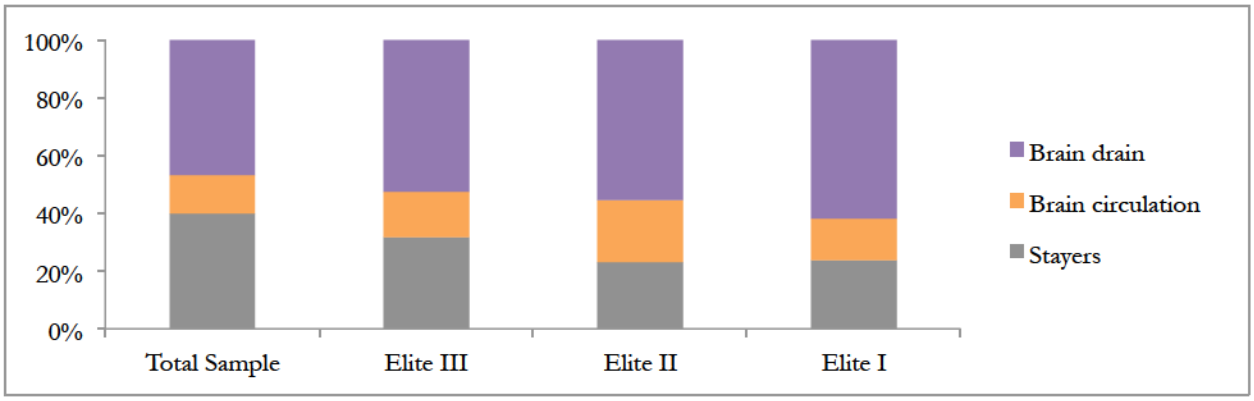


Figure 6.B. Percentage of U.S. nationals (stayers + brain circulation) and foreigners (U.S. brain gain) relative to those working in 2007 in the U.S. in the different samples

A. Country of B.A. = U.S



B. Country of B.A. = EU



C. Country of B.A. = RW

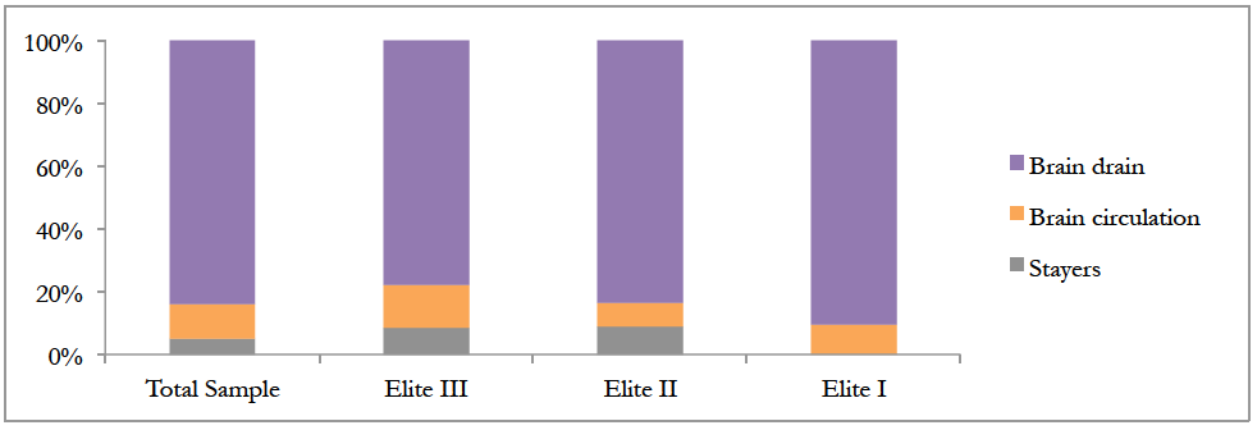


Figure 7. Distribution of U.S., EU, and RW nationals into movers (brain drain + brain circulation) and stayers in the different samples

Table 8.A. The allocation of the total quality points according to the institutions where economists work in 2007. Percentage distribution

GEOGR. AREAS:	TOTAL SAMPLE	ELITE III	ELITE II	ELITE I
Harvard + MIT	10.5	12.9	19.2	29.9
Other top ten U.S.	23.3	27.2	32.5	34.8
Rest of U.S.	41.8	39.4	32.7	26.1
TOTAL U.S.	75.6	79.5	84.4	90.8
EU	18.2	14.9	11.4	7.8
RW	6.2	5.6	4.2	1.4
Total	100.0	100.0	100.0	100.0

Table 8.B. The allocations of people and the total quality points according to the geographical area where economists are born. Percentage distributions

	TOTAL SAMPLE		ELITE III		ELITE II		ELITE I	
	Number of people	Quality points	Number of people	Quality points	Number of people	Quality points	Number of people	Quality points
NATIONALITY:								
U.S.	39.1	51.8	50.3	55.3	57.5	61.0	65.8	67.4
Stayers + br. circ.	36.8	50.0	48.7	53.7	56.3	59.7	64.2	66.1
Brain drain	2.3	1.8	1.6	1.5	1.2	1.3	1.6	1.3
EU	37.1	26.2	26.4	23.2	22.3	19.4	17.1	15.2
Stayers + br. circ.	19.8	12.6	12.5	10.6	9.9	8.3	6.5	5.9
Brain drain	17.3	13.6	13.9	12.6	12.4	11.1	10.6	9.3
To the U.S.	10.0	9.5	10.2	9.5	8.5	8.2	9.8	8.7
Elsewhere	7.3	4.1	3.7	3.1	3.9	2.9	0.8	0.6
RW	23.8	22.0	23.3	21.5	20.2	19.6	17.1	17.4
Stayers + br. circ.	3.8	4.1	5.2	4.3	3.3	2.7	1.6	1.4
Brain drain	20.0	17.9	18.1	17.2	16.9	16.9	15.5	16.0
To the U.S.	15.0	15.9	16.5	16.1	16.6	16.6	15.5	16.0
Elsewhere	5.0	2.0	1.6	1.1	0.3	0.3	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Figure 8.A. The research gap according to the institutions where economists work in 2007

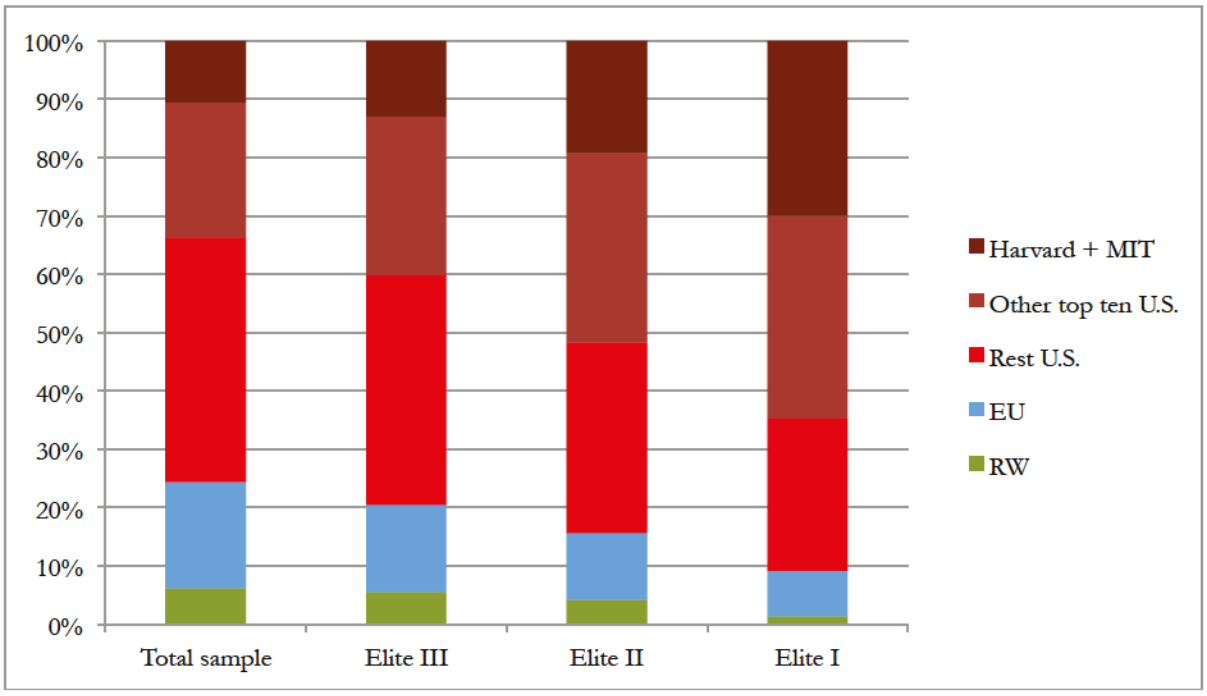
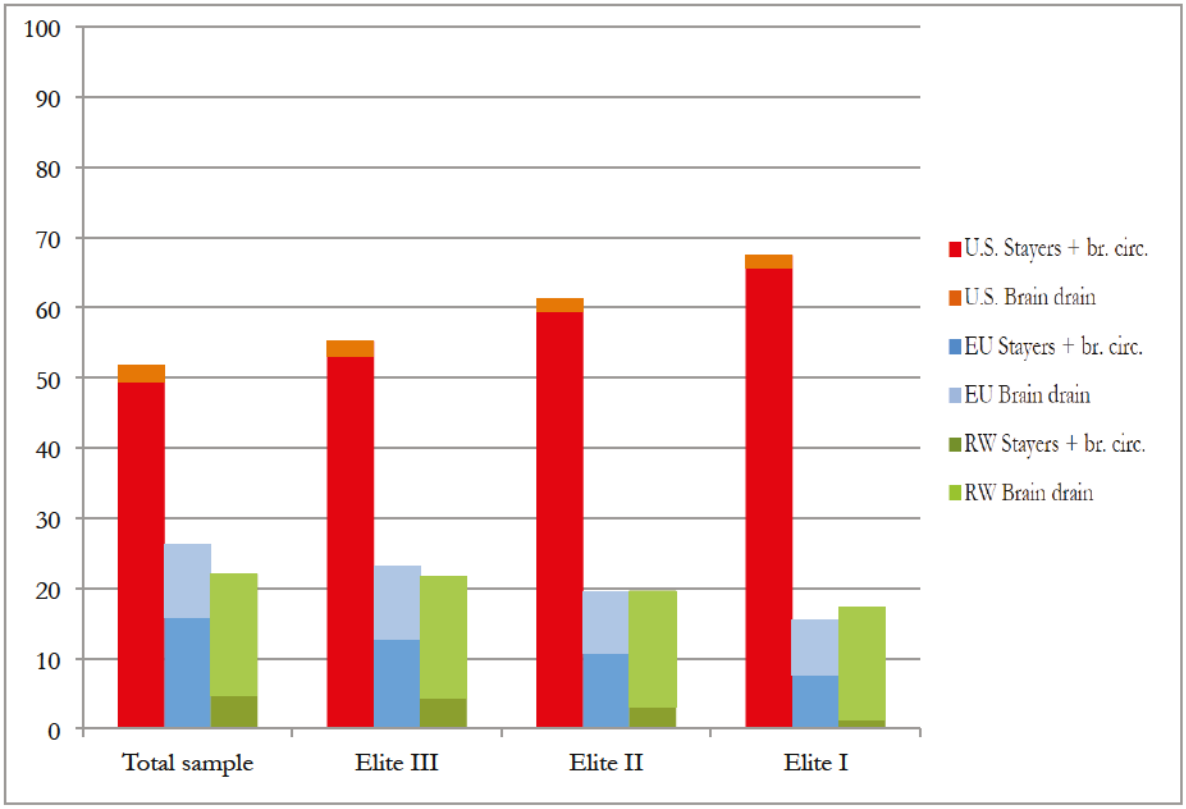
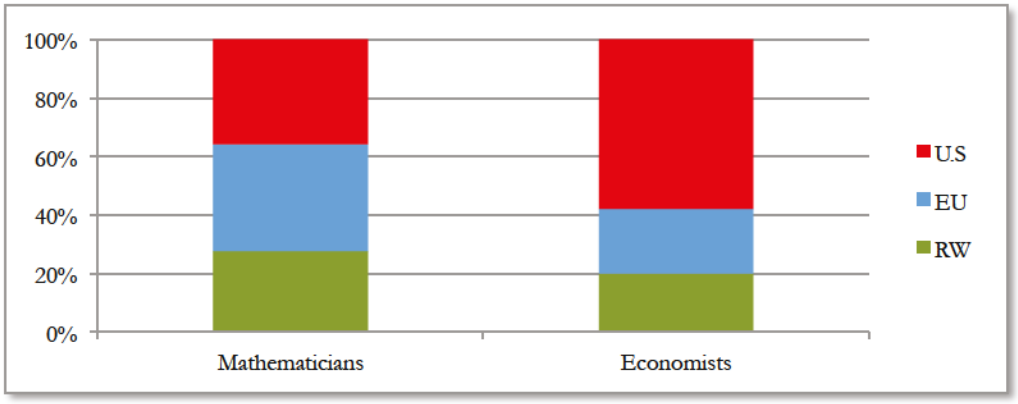


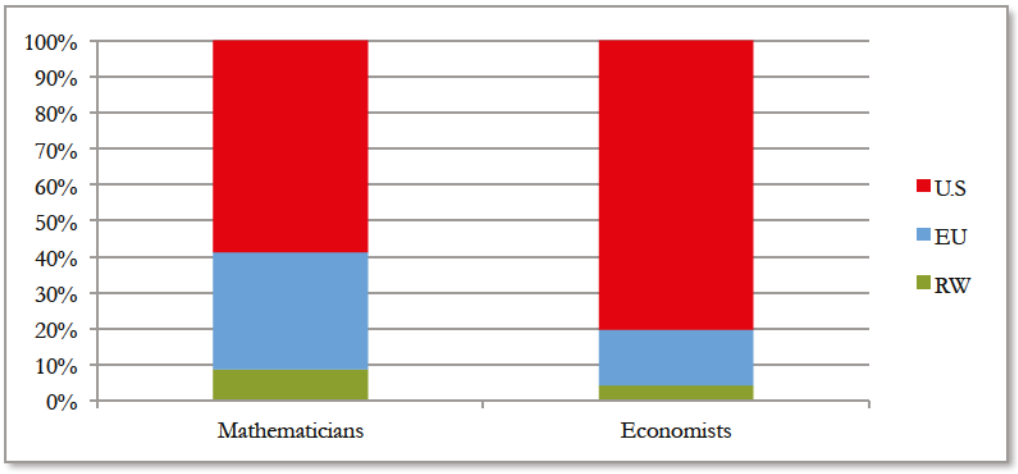
Figure 8.B. The research gap according to the geographical area where economists are born



A. Nationality (or country where economists and mathematicians obtain a B.A. or a BSc., respectively)



B. Geographical area where economists and mathematicians born in the EU or the RW obtain a Ph.D.



C. Geographical area where economists and mathematicians hold their current job

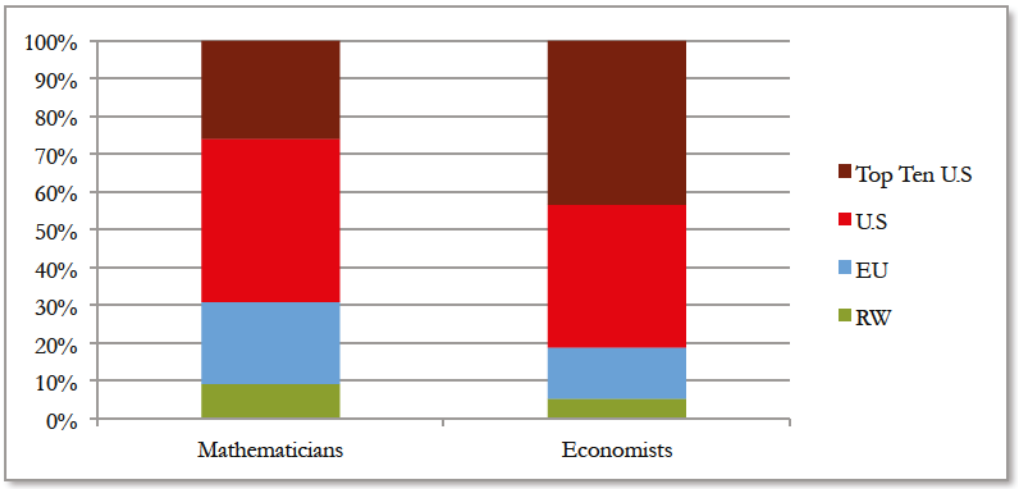
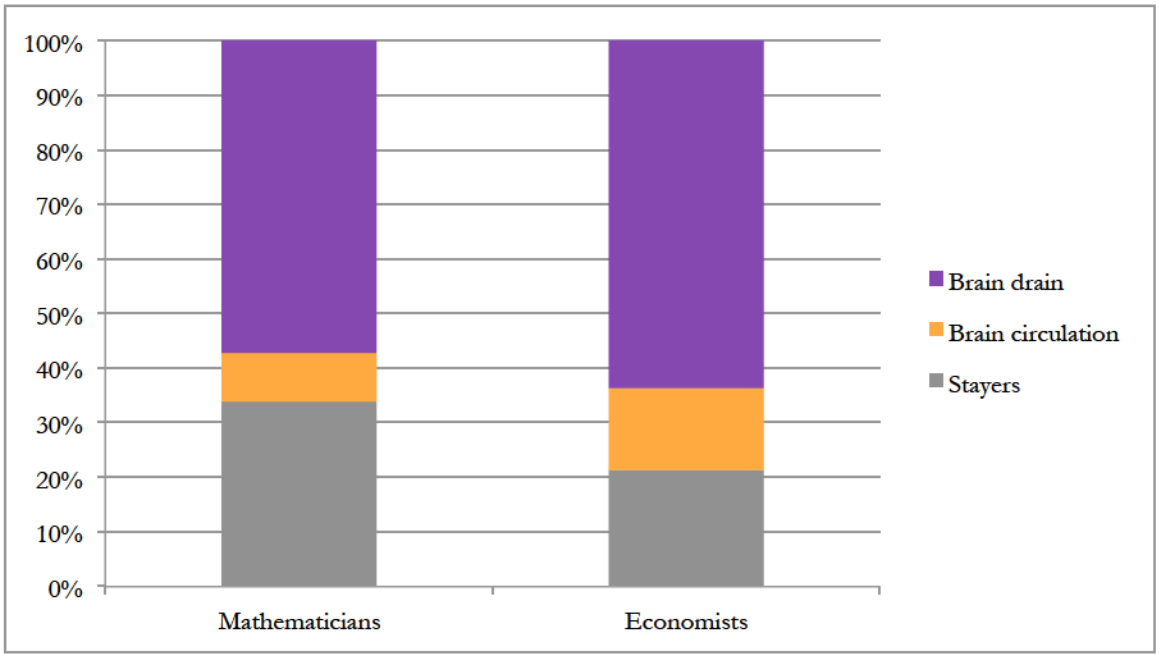


Figure 9. Geographical area where Elite II economists and highly cited mathematicians obtain a B.A. or a B.Sc., a Ph.D., and where they are working at academic institutions in 2007 and 1999, respectively

A. Distribution of highly cited mathematicians and Elite II economists into stayers, brain circulation, and brain drain



B. U.S. nationals *versus* foreigners (U.S. brain gain, or brain drain from the EU and the RW towards the U.S.) among those currently working in the U.S.

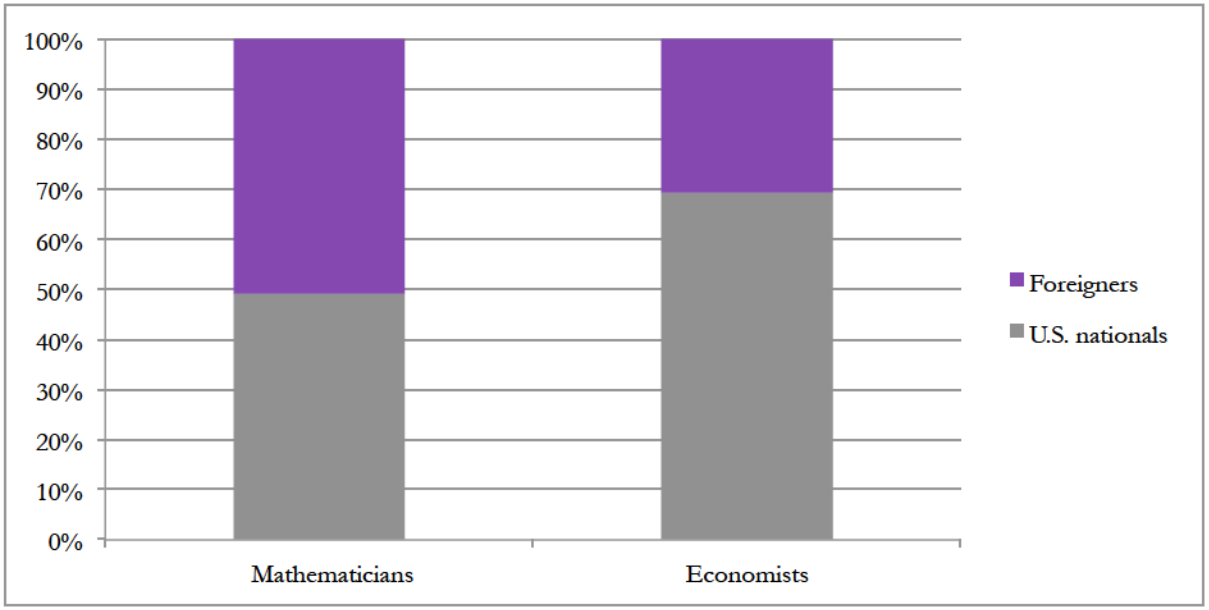


Figure 10. Percentage distribution into stayers, brain circulation, and brain drain, as well as U.S. nationals *versus* foreigners among those currently working in the U.S. Highly cited mathematicians and Elite II economists working at academic institutions in 2007 and 1999, respectively.

Table 9. The characteristics of the original 2,605 economists *versus* the characteristics of the 1,714 young people

A. Percentage distribution of economists by country of origin in the total sample, in %

I. Countries with some department in the sample	ORIGINAL SET	YOUNG PEOPLE
U.S.	39.1	27.8
EU	31.4	37.2
RW	10.8	10.6
II. Countries with no department in the sample		
EU	5.7	7.8
RW	13.0	16.6
Total	100.0	100.0

B. Percentage distribution of the people classified by country of origin (B.A.) and the current job (CJ) in 2007

	ORIGINAL SET				YOUNG PEOPLE			
	Total sample		Elite III		Total sample		Elite III	
Geogr. areas	B.A.	CJ	B.A.	CJ	B.A.	CJ	B.A.	CJ
U.S.	39.1	61.9	50.4	75.3	27.8	55.7	38.1	72.3
EU	37.1	30.9	26.3	17.4	45.0	37.5	35.3	21.9
RW	23.8	7.2	23.4	7.3	27.2	6.8	26.6	5.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

C. The clustering towards U.S. institutions

	ORIGINAL SET		YOUNG PEOPLE	
	Total sample	Elite III	Total sample	Elite III
a. CJ in the U.S. top ten	15.8%	28.8%	13.9%	27.0%
b. Ph.D. in the U.S. top ten	46.3%	57.4%	43.3%	58.5%
c. Ph.D. in Harvard and MIT	14.1%	21.3%	10.7%	22.4%
d. Insularity in the U.S[1]	78.3%	80.8%	77.7%	84.9%
e. Insularity in the EU[2]	71.9%	69.4%	71.4%	64.9%

[1] Percentage of economists working in 2007 in the top ten U.S. universities that obtain a Ph.D. in some of these universities

[2] Percentage of economists working in 2007 in the EU universities that obtain a Ph.D. in some of these universities

D. Percentage distribution between movers and stayers, and importance of the brain drain

	ORIGINAL SET		YOUNG PEOPLE	
	Total sample	Elite III	Total sample	Elite III
a. U.S stayers	36.2	47.6	25.9	35.4
b. EU stayers	14.8	8.4	16.7	10.7
c. RW stayers	1.2	1.9	0.8	1.3
Stayers = a + b + c	52.2	57.9	43.4	47.4
d. Brain circulation	8.3	8.4	8.3	8.1
e. Brain drain	39.5	33.7	48.3	44.5
Movers = d + e	47.8	42.1	56.6	52.6
Total	100.0	100.0	100.0	100.0
f. U.S. brain gain	25.0%	26.6%	30.2%	36.3%
g. EU brain gain	11.1%	4.8%	14.8%	6.8%

E. The allocation of the total quality points according to the institutions where economists work in 2007. Percentage distributions

	ORIGINAL SET		YOUNG PEOPLE	
Geographical areas	Total sample	Elite III	Total sample	Elite III
U.S.	75.6	90.9	68.4	75.0
EU	18.1	7.8	25.3	20.0
RW	6.2	1.4	6.3	5.0
Total	100.0	100.0	100.0	100.0

F. The allocations of total quality points according to the geographical area where economists are born. Percentage distributions

	ORIGINAL SET		YOUNG PEOPLE	
Geographical areas	Total sample	Elite III	Total sample	Elite III
U.S.	51.8	55.3	36.4	40.4
EU	26.2	23.2	37.9	34.7
Stayers + brain circulation	12.6	10.6	16.7	14.0
Brain drain to the U.S	9.5	9.5	14.9	16.1
Brain drain elsewhere	4.1	3.1	6.3	4.6
RW	22.0	21.5	25.7	24.9
Stayers + brain circulation	4.1	4.3	3.0	2.8
Brain drain to the U.S	15.9	16.1	19.3	20.5
Brain drain elsewhere	2.0	1.1	3.4	1.6
Total	100.0	100.0	100.0	100.0

APPENDIX I[33]

THE IDENTIFICATION OF SCIENTIFIC ELITES

A. Previous literature

The governing and regulating function of elites unveiled by the Sociology of Science take place within scientific specialties as reference groups. A *specialty* is understood as a community of scientists who directly or indirectly interact in the production of new knowledge about a common subject matter (Laudel, 2003). These are relatively small international communities that are unevenly distributed across countries. Science policy should be based on knowledge of the possibly specialty-specific causes and consequences of the elite brain drain. Thus, detailed investigations should start by delineating specialties, identifying specialties' elites, and analyzing their distribution across countries.

To the best of our knowledge, the only contribution that has successfully carried on this program is Laudel (2003, 2005), which reports two case studies. Both exploit the existence of special conference series, the so-called Gordon Conferences, which only invite scientists who have made outstanding contributions to very specific topics, for example, the hormone Angiotensin, and Vibrational Spectroscopy, a specialty within physical chemistry that uses spectroscopic techniques to analyze molecular motion. In the first case, Laudel starts with a list of 215 participants in six meetings that took place between 1996 and 2002. Using bibliometric data about citations and co-citations links, two groups of 130 and 87 scientists were then traced for international mobility using different data sources. In the second case, 110 participants in four conferences that took place in the above period give rise to a smaller elite consisting of 64 scientists selected with the help of bibliometric information. A large part of the Angiotensin elite has always lived in the U.S (45% in the 130 members case), but the U.S. has attracted many elite scientists (13% migrated, and 13% stayed temporally). The only other country that experimented some brain gain was Switzerland. Vibrational Spectroscopy differs in that nearly two thirds of its elite always lived in the U.S. Moreover, the U.S. gained three members but also lost two. Generally, migration currents are much weaker than in the Angiotensin case.

Although this summary does not do justice to the study, one important conclusion is that, at the specialty level, the elite brain drain and, more generally, migration currents, appear to be field specific. Consequently, it can be assumed that reasons for migrating are also field specific –a lesson that may be lost if we base science policy on a general assessment of a country's science system and general descriptions of working conditions. Similarly, as indicated in the concluding section of this paper, the consequences of losing a specialty's elite members are easier to describe than those of losing a set of excellence scientist in a broad field in a given country. As Laudel emphasizes, in the first case the loss typically means that the national specialty becomes uncoupled from frontier science; quality standards might no longer be enforced nationally; the country may no longer be able to recruit or train the best young scientists in the field, and an important channel of communicating societal interests to those who govern the specialty gets lost. At what stage the accumulation of these effects may affect the national science system as a whole remains to be determined case by case. On the other hand, although the loss of excellent scientists is always undesirable, the functional consequences for specific specialties within a broad field are harder to assess.

Thus, in order to identify the elite migration that can functionally affect a country's science, and in order to design field-specific measures to offset field-specific causes for migration, we need to reproduce

[33] To facilitate the reading of Appendixes I and II, all references can be found at the end of Appendix I, regardless of whether they also appear in the text of the paper.

Ludel's exercise for, say several hundred specialties –a grueling task that has not been addressed in the literature.[34] The reasons are multiple.

Firstly, there is no generally agreed-upon Map of Science that builds from a well-defined set of specialties towards other aggregate levels (see *inter alia* Small, 1999, Boyack *et al.*, 2005, Leydesdorff, 2004, 2006, Leydersdorff and Rafols, 2009, and Waltman *et al.*, 2010 as well as the references they contain). Therefore, most of the few elite studies available only differentiate very roughly between broad fields. For example, Stephan and Levin (2001) distinguish life sciences, physical sciences, mathematical and computer sciences, earth and environmental sciences, and engineering, while Weinberger and Galeson (2005) and Hunter *et al.* (2009) focus on economics and physics, respectively.

Secondly, existing studies are unable to take into account the functional aspects characterizing an elite that sociologists have emphasized. Instead, they limit the identification of elites to outstanding performance of three types. (i) High academic recognition, such as Nobel prizes (Zuckerman, 1977, Weinberger and Galeson, 2005, and Hunter *et al.*, 2009), or membership in the National Academy of Sciences or the national Academy of Engineering in the U.S. (Stephan and Levin, 2001). (ii) Authors of the 250 most-cited papers according to the Institute for Scientific Information (Stephan and Levin, 2001, Ioannidis (2004), Bauwens *et al.*, 2008, and Hunter *et al.*, 2009). (iii) Authors of citation classics, hot papers, and highly cited patents, and scientists that have played a key role in launching biotechnology firms (Stephan and Levin, 2001).

In this paper we identify the elite in Economics with a set of highly productive economists according to a methodology explained in Section II.1 in the text, and justified in the next Sub-section.

B. The methodological criteria followed in this paper to identify an elite

Our defense of the methodological criteria adopted in this paper in the identification of several elites in Economics follows the same numbering system used in Section II.1 of the paper.

1. Both in the U.S., the EU, as well as other parts of the world, Economics & Business are closely related but separate academic disciplines generally organized into Economics Departments and Business Schools. Of course, a good number of the scholars working in the former might be engaged in research on Finance, Management, and other traditional Business topics. However, as members of Economics departments, we will consider them as professionals mainly devoted to Economics. Similarly, many scholars working in Business Schools, other academic departments, research institutes, central banks, or international organizations are regularly doing good research in Economics. However, with the exceptions discussed below, they are excluded from this study.

2. We have compared the list of top 81 Economics departments in the world according to the Econphd (2004) university ranking adopted in this paper with the first 81 economics departments listed in three other equally acceptable university rankings.[35] The main conclusion is that, apart from differences in

[34] Note that, in many sciences, a disaggregated analysis at the specialty level may very well lead to many scientists belonging to two or more elite specialties.

[35] The first two are based on the mean rank over 11 different rankings, and the mean rank that would result when only taking the five, 25, and 50 best performing scholars, thereby (partially) correcting for the size-bias of the first (Tables 9 and 13 in Coupé, 2003, respectively). The third ranking is based on the publications in the period 1995-1999 in the top 30 journals in the Kalaitzidakis *et al.* (2003) journal ranking. For a discussion of these and other alternative rankings, see Ruiz-Castillo (2008).

the order in which each institution appears in the various rankings, our list has between 70 and 73 departments in common with each of the three other lists.

Three additional rankings of a more limited coverage should be mentioned. Firstly, Winkler *et al.* (2011) classify 771 four-year colleges and universities distinguished by the Carnegie Foundation (1994) in the U.S. into several groups. All of the 30 members of the top group, and 22 out of the 25 members of the second group among those granting Ph.D.s, belong to our list. Secondly, Amir and Knauff (2008) rank 58 Economics departments worldwide in terms of graduate education in 2006. The first 36 institutions in this ranking are included in ours, while only eight institutions –five of them from the EU, one from the U.S., and two from the RW– of the remaining 22 are missing in our list. Finally, Van Bouwel and Veugelers (2014) compile a list of "top institutes" using three different rankings. All of the 11 super-top, 21 mid-top, and eight sub-top institutions in Canada, the U.S., and Europe listed in their Table I are also included in our list. Therefore, we conclude that our 81 institutions constitute a useful sample of the best Economics departments in the world in 2007.

3. Whenever educational information could not be found through Internet, we wrote to the person in question. Many people answered providing the required information. Otherwise, we proceeded as follows. There were 30 cases in which we lacked information on a person's B.A., but the nationality could be safely inferred from the remaining information on the person's last name, the country where s/he did her Ph.D., and the country where s/he worked in 2007. One person –whose nationality was known– never obtained an undergraduate degree. On the other hand, for people whose higher university degree is an M.A. (mainly older individuals working in the UK), academic age is counted from that date up to 2007. For the only scholar that never obtained a Ph.D. or an M.A., academic age is counted since earning a B.A. up to 2007. In the 29 cases where the only missing data is the date of the Ph.D., this piece of information was imputed taking into account the first published Working Paper or professional article.

4. As we said in Section II.1, we are constrained to measure productivity by weighting the number of articles published in four journal classes. Classes A, B and C consist of five, 34, and 47 journals, respectively, while class D consists of all other journals in the periodical literature. In brief, starting from the top 63 journals in the Kalaitzidakis *et al.* (2003) journal ranking, the different classes have been constructed also taking into account the rankings in Lubrano *et al.* (2003), and Kodrzycki and Yu (2006). The details, as well as a listing of all journals are in Appendix II. We construct a quality index Q for each researcher by applying the following rather elitist weighting system: class A, 40 points; class B, 15 points, class C, 7 points, and class D, 1 point.[36]

6. As indicated in Section II.1, we suggest working with elites of different sizes: (i) a group of 833 researchers among the 2,530 with at least one publication with a Q index above the mean $\mu_1 = 307.3$; (ii) 302 researchers with Q greater than $\mu_2 = 707.4$, and (iii) 111 researchers with Q greater than $\mu_3 = 1{,}165.2$. We have compared the distribution of Q with the distribution P of the total number of publications of all classes. The means necessary for applying the CSS technique are $m_1 = 27$, $m_2 = 59.2$, and $m_3 = 96.4$. As observed in Table B in Appendix III, the skewness of P is practically the same as the skewness of Q

[36] Oster and Hamermesch (1998) use the Laband and Piette (1994) weights that, as in our case, distinguish strongly between journals. Rauber and Ursprung (2008) use the Combes and Linneman (2003) weights that lie between unity for five top journals, 2/3 for sixteen journals, down to 1/12 for the lowest quality journals –a more egalitarian scheme than our own. Coupé *et al.* (2006) use the average of the rankings based on different weighting schemes computed in Coupé (2003). In order to assess the different degree of elitism involved, Henrekson and Waldenström (2011) display the cumulative distribution of the weights attributed in three important measures of journal quality. For a classification of different schemes in an elitist-egalitarian axis, see Ruiz-Castillo (2008).

(compare Table B with Panel A in Table 1 in the text): the mean m_1 is 17 percentage points to the right of the median, and 11% of all individuals with a number of publications above m_2 account for approximately 40% of all publications. Furthermore, the coefficient of correlation between P and Q is 0.79. However, in so far as Q weights differently publications in journal classes A, B, C, and D, cardinal differences between any pair of individuals according to Q would dramatize productivity differences among them relative to cardinal differences according to P. Therefore, we believe that it is preferable to work with index Q rather than P.

On the other hand, we have experimented with a less elitist weighting system in which journals of class A, B, C, and D receive 20, 10, 5, and 1 point, respectively. The corresponding cutting points separating the three Elites are $\mu'_1 = 187.6$; $\mu'_2 = 419.8$, and $\mu'_3 = 670.1$. The main consequence is that a relatively small number of individuals lose their status, while a few others improve their situation. In particular, 35 individuals disappear from Elite III, seven go from Elite II to Elite III, and five go from Elite I to Elite II**.** In turn, 44 new individuals become part of Elite III, 23 go from Elite III to Elite II, and eight go from Elite II to Elite I. In net terms, Elite III increases by 9 individuals, or 1%; Elite II by 16, or 4.8%, and Elite I by three, or 2.4%. In brief, changing the journal weighting system in a less elitist direction does not dramatically alter the identity of the most productive researchers. We believe that the more demanding members of the profession may agree with us that the change is not worth it. Therefore, in the sequel we stick to the original, more discriminating weighting system in which the most productive scholars among those in the top 81 Economics departments with at least one publication are 111, 302, and 833.

7. As indicated in the text, of the 75 Econometric Society Fellows included in the elites 34 belong to Business Schools. The remaining 41 scholars belong to 29 different institutions. However, to simplify matters, they have been classified into three categories, namely, Economic departments in the U.S. (13 people), Europe (15 people), or the RW (13 people). Thus, the 2,780 individuals in our final dataset are classified into 85 categories: the 81 original Economics departments, plus four types of institutions for the ESFs. The complete listing of institutions, together with information on the number of faculty members and their publications in classes A to D, is in Table A in Appendix III. This table also lists some other Economics departments that often appear among the world best according to the rankings described in point 2 above. Although not included in this paper, these institutions are not very far away from the top 81 departments according to Econphd (2004).

Finally, the members of Elites I, II, and III are listed in Appendix IV.

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APPENDIX II

A CLASSIFICATION OF JOURNALS INTO FOUR GROUPS

The following three references, whose merits will not be discussed here, have been taken into account.

1. Kalaitzidakis *et al.* (2003) rank 159 journals from the Economics section of the SSCI (*Social Science Citation Index*) on the basis of the citations received during 1998 by the papers published during 1994-1998. The procedure takes into account the relative importance of the journal making each citation, and does not include self-citations, namely, citations made by one journal to papers published in that same journal.

2. Lubrano *et al.* (2003) follow a mixed strategy: they start by entrusting to one of their members, Alan Kirman, the ranking of 505 journals that come from the 680 journals in *EconLit* after eliminating those with fewer than ten articles in ten years. In a second phase, they gathered information on the number of citations which 307 journals receive. Finally, they asked Professor Kirman to modify his original ranking in light of this information. The result is a grouping of all the journals in six classes that contain six journals with ten points, 17 with eight (except for one with seven), 45 with six, and the remaining 437 with four, two, or one point. For certain purposes, these authors select the 68 journals with six or more points.

3. Kodrzycki and Yu (2006) are the first to apply the method axiomatized by Palacios-Huerta and Volij (2004) to a large set of journals.

We are interested in classifying relevant international journals into three groups, classes A, B, and C, including all remaining journals in class D. Hopefully, the first 60 or 70 journals in each of the 4 rankings already introduced are sufficiently overlapping.

• We start from the first 30 journals in Kalaitzidakis *et al.* (2003). Class A, consisting of 5 journals, needs little justification.

• There remain 25 journals from the initial list. To these, we add 4 top journals in non-Economics areas that are assigned eight (or seven) points in Lubrano *et al.* (2003): *American Political Science*, *JASA*, *Michigan Law Review*, and *Yale Law Journal*. Then we bring in four journals highly classified in Kodrzycki and Yu (2006), namely, those journals whose average rank goes from 3.5 to 23 according to these authors: *Journal of Finance*, *Journal of Money Credit and Banking*, *Brookings Papers*, and *Journal of Economic Growth*. Class B is formed by these 25 + 4 + 4 = 33 journals.

• Next, we consider the 34 journals ranked 31 to 64 in Kalaitzidakis *et al.* (2003). First, we add three journals with six points in Lubrano *et al.* (2003), clearly within the first 80 in Kodrzycki and Yu (2006), and within ranks 71-73 in Kalaitzidakis *et al.* (2003): *Journal of Economics and Management Strategy*, *Journal of Health Economics*, and *Regional Science and Urban Economics*. Two more journals with six points in Lubrano *et al.* (2003) are included: *Macroeconomic Dynamics* and *Industrial and Labor Relations Review*. Second, we include eight journals whose average rank in Kodrzycki and Yu (2006) is within the 7-37 range: 2 Macro journals -*NBER Macroeconomic Annual* and *Review of Economic Dynamics*- five Business and Financial Economics journals - *Journal of Business*, *Journal of Accounting Economics*, *Review of Financial Studies*, *Journal of Financial Intermediaries*- and *Economic Policy*. Therefore, class C is formed by 47 = 34 + 5 + 8 journals.

• In brief, as indicated in the text, starting from the top 64 Kalaitzidakis *et al.* (2003) journals we have reached a total of 5 + 34 + 47 = 86 journals in classes A, B, and C, respectively, paying attention to the other rankings.

We exclude six journals with six points in Lubrano *et al.* (2003) -that do not appear at all in the other classifications- and five journals with average rank between 60 and 70 in Kodrzycki and Yu (2006).

Class A
American Economic Review
Econometrica
Journal of Political Economy
Quarterly Journal of Economics
Review of Economic Studies.

Class B

American Political Science Review
Brookings Papers on Economic Activity
Econometric Theory
Economic Journal
Economic Theory
Economics Letters
European Economic Review
Games and Economic Behavior
International Economic Review
Journal of Applied Econometrics
Journal of Business and Economic Statistics
Journal of Econometrics
Journal of Economic Dynamics and Control
Journal of Economic Growth
Journal of Economic Literature
Journal of Economic Perspectives
Journal of Economic Theory
Journal of Environmental Economics and Management
Journal of the European Economic Association
Journal of Finance
Journal of Financial Economics
Journal of Human Resources
Journal of International Economics
Journal of Labor Economics
Journal of Monetary Economics
Journal of Money, Credit and Banking
Journal of Public Economics
Journal of the American Statistical Association
Michigan Law Review
Oxford Bulletin of Economics and Statistics,
Rand Journal of Economics
Review of Economics and Statistics
Scandinavian Journal of Economics
Yale Law Journal

Class C

American Journal of Agricultural Economics
Applied Economics
Canadian Journal of Economics
Contemporary Economic Policy
Economic Inquiry
Economic Policy
Economic Record
Economica
Explorations in Economic History
IMF Staff Papers
Industrial and Labor Relations Review
International Journal of Game Theory
International Journal of Industrial Organization
Journal of Accounting Economics
Journal of Banking and Finance
Journal of Business
Journal of Comparative Economics
Journal of Development Economics
Journal of Economic Behavior and Organization
Journal of Economic History
Journal of Economics and Management Strategies
Journal of Financial and Quantitative Analysis
Journal of Financial Intermediaries
Journal of Health Economics
Journal of Industrial Economics
Journal of Institutional and Theoretical Economics
Journal of International Money and Finance
Journal of Law, Economics and Organization
Journal of Law and Economics
Journal of Mathematical Economics
Journal of Population Economics
Journal of Risk and Uncertainty
Journal of Urban Economics
Land Economics
Macroeconomic Dynamics
National Tax Journal
NBER Macroeconomics Annual
Oxford Economic Papers
Public Choice
Regional Science and Urban Economics
Review of Economic Dynamics
Review of Financial Studies
Social Choice and Welfare
Southern Economic Journal
Theory and Decision
World Bank Economic Review
World Development.

APPENDIX III

SOME DESCRIPTIVE STATISTICS

Table A. Publications in journals of class A, B, C and D, and quality index for 2,705 faculty members at 81 Economics Departments and 75 Econometric Society Fellows at other institutions in 2007

		Number of scholars		Number of publications					
		Total	Without any Publication	A	B	C	D	Total	Quality Index, Q
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	A. 81 TOP ECONOMICS DEPARTMENTS:								
	(Ordered according to the Econphd (2004) ranking)	2,705	175	9,595	20,261	10,260	28,255	68,371	777,530
	U.S.1								
1	Harvard University	55	0	842	914	299	862	2,917	50,046
2	University of Chicago	30	1	291	294	110	254	949	16,964
3	MIT	40	2	602	593	208	948	2,351	35,171
4	U. of California, Berkley	58	1	463	660	286	754	2,163	30,890
5	Princeton University	54	4	509	642	172	826	2,149	31,848
6	Stanford University	42	4	314	316	100	318	1,048	18,218
7	Northwestern University	35	4	230	307	87	279	903	14,606
8	University of Pennsylvania	30	1	215	358	89	162	824	14,666
9	Yale University	42	6	350	518	145	706	1,719	23,346
10	New York University	44	1	348	529	129	524	1,530	23,153
11	U. of California, LA	45	2	213	250	182	379	1,024	13,741
13	Columbia University	45	0	388	529	209	565	1,691	25,274
14	U. of Wisconsin, Madison	30	5	86	238	74	154	552	7,608
15	Cornell University	32	1	156	393	182	472	1,203	13,699
16	University of Michigan	54	6	216	348	145	443	1,152	15,173
	U.S.2								
17	University of Maryland	39	2	145	257	229	304	935	11,333
19	U. of Texas, Austin	33	2	114	243	120	328	805	9,253
21	U. of Cal., San Diego	40	3	180	394	103	318	995	14,046
22	University of Rochester	19	3	57	101	51	100	309	4,201
23	Ohio State University	39	2	139	292	170	344	945	11,304
25	U. of Illinois, Urbana	27	2	45	176	91	209	521	5,195
26	Boston University	38	4	157	240	129	189	715	10,843
27	Brown University	28	3	125	184	150	128	587	8,788
28	U. California, Davis	31	1	55	191	158	240	644	6,253
29	University of Minnesota	26	3	126	191	50	101	468	8,306
32	U. of Southern California	31	4	87	285	160	652	1,184	9,367
33	Michigan State U.	44	1	101	328	182	340	951	10,392
35	Duke University	43	0	148	296	174	554	1,172	11,958

38	PA State University	24	2	65	154	84	191	494	5,605
40	Carnegie Mellon U.	23	1	57	103	31	74	265	4,085
41	U. of North Carolina	24	2	22	144	69	240	475	3,694
42	Boston College	26	1	69	223	114	222	628	7,011
43	CA Institute of Technology	17	0	88	162	74	136	460	6,530
44	Texas A and M	25	1	50	161	103	183	497	5,216
49	University of Indiana	26	2	27	140	111	159	437	4,005
51	Johns Hopkins	14	0	80	171	54	104	409	6,193
52	Rutgers University	33	1	41	153	157	336	687	5,213
53	University of Virginia	32	4	67	157	126	142	492	5,933
54	Vanderbilt University	34	1	95	275	227	529	1,126	9,816
55	Georgetown University	25	2	45	175	63	73	356	4,876
56	Arizona State University	28	3	59	244	171	344	818	7,390
57	University of Arizona	25	6	39	87	72	103	301	3,400
58	Dartmouth College	29	2	45	136	123	234	538	4,812
60	University of Washington	25	1	82	271	140	181	674	8,366
62	Iowa State University	44	0	34	218	362	809	1,423	7,611
63	Washington U., St Louis	30	1	133	246	177	220	776	10,292
67	Purdue University	20	5	29	87	86	184	386	3,165
70	University of Pittsburgh	25	5	36	142	50	174	402	4,044
72	University of Iowa	18	3	31	139	53	77	300	3,720
75	Rice University	19	1	63	151	91	206	511	5,537
77	U. of California, Irvine	25	3	23	143	136	238	540	4,119
78	University of Florida	18	1	30	109	93	269	501	3,662
	EU1								
12	London Sch. of Economics	55	4	189	421	116	441	1,167	15,012
18	Toulouse University	78	0	126	421	203	830	1,580	13,403
24	Tilburg University	54	2	39	377	301	1,238	1,955	10,259
31	Oxford University	44	1	153	395	177	634	1,359	13,741
34	University of Warwick	44	2	88	393	204	375	1,060	11,014
37	University of Amsterdam	39	1	19	202	125	333	679	4,873
39	Cambridge University	31	1	70	207	73	342	692	6,685
	EU2								
45	European Institute	12	1	23	152	49	161	385	3,655
46	U. Carlos III, Spain	56	5	15	191	81	377	664	4,328
47	Univ. College London	35	2	120	292	103	376	891	10,174
48	University of Essex	30	2	30	148	73	95	346	3,953
59	Stockholm University	18	0	23	86	51	216	376	2,732
65	University of York	42	1	24	139	87	398	648	3,965
66	U. Pompeu Fabra	39	3	48	143	54	428	673	4,817
68	University of Nottingham	47	0	30	305	211	847	1,393	7,888
71	Stockholm School of Ecs.	15	1	16	86	68	332	502	2,670
73	Erasmus University	22	1	15	149	95	410	669	3,815
74	University of Copenhagen	46	4	10	179	71	317	577	3,828
76	Catholic Univ. of Louvain	40	0	24	221	140	678	1,063	5,793
79	U. Autónoma, Barcelona	37	4	15	98	68	416	597	2,894
80	Free Univ. of Amsterdam	23	2	11	115	55	183	364	2,678
81	University of Bonn	26	5	56	147	104	517	824	5,586
	RW								

20	Univ. of British Columbia	30	3	73	188	110	160	531	6,560
36	University of Tel Aviv	16	1	58	205	70	122	455	5,937
61	University of Toronto	53	8	99	255	190	402	946	9,327
64	Hebrew University	26	0	133	219	157	408	917	9,955
30	Queen's University	26	3	42	213	120	143	518	5,738
50	University of Montreal	23	1	18	160	122	155	455	4,007
69	Hong Kong University	15	1	16	97	31	40	184	2,321
B. ECONOMETRIC SOCIETY FELLOWS AT:		75	0	935	1,388	563	3,357	6,243	64,955
	Other U.S. Economics Depts.	13	0	282	290	174	828	1,574	17,502
	Other EU Economics Depts.	15	0	121	223	87	905	1,336	9,612
	Other RW Economics Depts.	13	0	77	222	67	257	623	7,069
	Business Schools	34	0	455	653	235	1,367	2,710	30,772
	TOTAL	**2,780**	**175**	**10,532**	**21,666**	**10,831**	**31,649**	**74,678**	**842,905**

UNIVERSITIES OFTEN MENTIONED IN OTHER RANKINGS BUT NOT INCLUDED IN THIS PAPER (Econphd, 2004, ranking):

University of Syracuse (82)

University of California, Santa Barbara (83)

Australian National University (84)

University of Colorado, Boulder (87)

Virginia Polytechnic Institute (95)

University of Southampton (96)

University of Western Ontario (103)

Table B. The skewness of the *P* index distribution for the 2,533 Economists in the best 81 Economics departments with at least one publication in 2007

Percentage of Individuals In Category:				Percentage of Quality Points Accounted for By Category:			
1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
67.1	21.9	7.6	3.4	27.6	32.8	21.1	18.5

Category 1 = individuals with low productivity, smaller than or equal to $m_1 = 27.0$
Category 2 = individuals with an intermediate productivity, above m_1 and smaller or equal to $m_2 = 59.2$
Category 3 = individuals with a remarkable productivity, above m_2 and smaller or equal to $m_3 = 96.4$
Category 4 = individuals with an outstanding productivity above m_3,

where: m_1 = mean of the n° papers distribution;
m_2 = mean n° papers of individuals with n° papers above m_1,
m_3 = mean n° papers of individuals with n° papers above m_2.

Table C. The distribution of educational and research institutions for the partition of the world into the U.S., the European Union (EU), and the Rest of the World (RW)

	Total Sample			Elite III			Elite II			Elite I		
	B.A.	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**
U.S.	246	77	63	131	50	63	64	31	52	31	24	32
EU	221	126	33	105	58	33	35	20	17	14	7	7
RW	191	31	17	83	14	17	33	8	11	13	3	2
Total	**658**	**234**	**113**	**319**	**112**	**113**	**132**	**59**	**80**	**58**	**34**	**41**

CJ = Current job in 2007

Table D. Institutions where elite university professors are trained

	TOTAL SAMPLE. Current job in 2007 at:					
	Top 10-U.S. (1)	Rest-U.S. (2)	Top 2-EU (3)	Rest-EU (4)	RW (5)	TOTAL (6)
Ph.D. obtained in:						
1. Harvard	69	88	9	8	8	**182**
2. MIT	69	98	3	12	5	**187**
3. U. of Chicago	27	81	-	4	12	**124**
4. Princeton U.	33	60	7	6	16	**122**
5. Stanford U.	36	67	6	8	15	**132**
6. UCA, Berkeley	20	77	8	7	10	**122**
7. Northwestern U.	14	51	1	13	10	**89**
8. U. of Pennsylvania	6	50	1	8	2	**67**
9. Yale U.	28	58	5	4	7	**102**
10. U. of Minnesota	20	41	-	10	10	**81**
Top Ten U.S.	322	671	40	80	95	**1,208**
11. Rest U.S.	60	414	6	73	32	**585**
TOTAL U.S.	382	1,085	46	153	127	**1,793**
12. LSE + Oxford U.	10	25	32	59	6	**132**
13. Rest EU	16	63	14	475	8	**576**
TOTAL EU	26	88	46	534	14	**708**
14. RW	3	30	2	27	46	**108**
TOTAL	**411**	**1,203**	**94**	**714**	**187**	**2,609**

ELITE III. Current job in 2007 at:

	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
Ph.D. obtained in:					
1. Harvard	45	37	6	2	**90**
2. MIT	53	41	6	4	**104**
3. U. of Chicago	17	44	-	4	**65**
4. Princeton U.	21	23	3	7	**54**
5. Stanford U.	23	20	5	4	**52**
6. UCA, Berkeley	13	24	5	2	**44**
7. Northwestern U.	5	16	1	1	**23**
8. U. of Pennsylvania	3	12	1	1	**17**
9. Yale U.	18	21	2	1	**42**
10. U. of Minnesota	14	15	3	-	**32**
Top Ten U.S.	212	253	32	26	**523**
11. Rest U.S.	33	126	12	10	**181**
TOTAL U.S.	245	379	44	36	**704**
12. LSE + Oxford U.	8	11	27	4	**50**
13. Rest EU	9	22	83	2	**116**
TOTAL EU	17	33	110	6	**166**
14. RW	-	11	6	24	**41**
TOTAL	**262**	**423**	**160**	**66**	**911**

ELITE II. Current job in 2007 at:

	Top 10-U.S. (1)	Rest-U.S. (2)	Rest-EU (3)	RW (4)	TOTAL (5)
Ph.D. obtained in:					
1. Harvard	30	14	2	-	**46**
2. MIT	36	17	4	3	**60**
3. Next 8 U.S.	51	42	6	3	**102**
4. Rest U.S.	18	35	2	2	**57**
TOTAL U.S.	135	108	14	8	**265**
5. LSE + Oxford U.	6	6	7	1	**20**
6. Rest EU	4	6	20	2	**32**
TOTAL EU	10	12	27	3	**52**
7. RW	-	6	4	7	**17**
TOTAL	**145**	**126**	**45**	**18**	**334**

ELITE I. Current job in 2007 at:

	Top 10-U.S. (1)	Rest-U.S. (2)	Rest-EU (3)	RW (4)	TOTAL (5)
Ph.D. obtained in:					
1. Harvard	15	7	1	-	**23**
2. MIT	23	6	1	1	**31**
3. Next 8 U.S.	19	8	-	1	**28**
4. Rest U.S.	6	10	2	-	**18**
TOTAL U.S.	63	31	4	2	**100**
5. LSE + Oxford U.	5	2	4	-	**11**
6. Rest EU	4	3	2	-	**9**
TOTAL EU	9	5	6	-	**20**
7. RW	-	2	1	-	**3**
TOTAL	**72**	**38**	**11**	**2**	**123**

Table E. Origins and Destinations. The Big Picture

A. TOTAL SAMPLE

ORIGINS	DESTINATIONS		Stayers		Brain Circulation		
B.A. in U.S. = 1,018	1. Remain in U.S.	960 =	943	+	17		
(1 + 2)			To EU		To RW		
	2. Brain Drained	58 =	38	+	20		
			From EU		From RW		
	3. Brain Gain	652 =	261	+	391		
	4. Current Job in U.S. = 1 + 3:	1,612					
	5. Net Brain Gain = 3 – 2	594 =	223	+	371		
			Stayers		Brain Circulation		
B.A. in EU = 966	1. Remain in EU	516 =	387	+	129		
(1 + 2)			To U.S		To RW		To EU
	2. Brain Drained	450 =	261	+	37	+	152
			From U.S.		From RW		From RW
	3. Brain Gain	290 =	38	+	100	+	152
	4. Current Job in EU = 1 + 3	806					
	5. Net Brain Gain = 3 – 2	- 160 =	- 223	+	63		
			Stayers		Brain Circulation		
B.A. in RW = 621	1. Remain in RW	100 =	31	+	69		
(1 + 2)			To U.S		To EU		To RW
	2. Brain Drained	521 =	391	+	100	+	30
			From U.S.		From EU		From RW
	3. Brain Gain	87 =	20	+	37	+	30
	4. Current Job in RW = 1 + 3	187					
	5. Net Brain Gain = 3 – 2 =	- 434 =	- 371	-	63		

B. ELITE III

ORIGINS	DESTINATIONS		Stayers		Brain Circulation		
B.A. in U.S. = 457	**1. Remain in U.S.**	442 =	432	+	10		
(1 + 2)			**To EU**		**To RW**		
	2. Brain Drained	15=	11	+	4		
			From EU		**From RW**		
	3. Brain Gain	242 =	93	+	149		
	4. Current Job in U.S. = 1 + 3	684					
	5. Net Brain Gain = 3 – 2	227 =	82	+	145		
			Stayers		**Brain Circulation**		
B.A. in EU = 240	**1. Remain in EU**	114 =	77	+	37		
(1 + 2)			**To U.S**		**To RW**		**To EU**
	2. Brain Drained	126 =	93	+	11	+	22
			From U.S.		**From RW**		**From EU**
	3. Brain Gain	44	11	+	11	+	22
	4. Current Job in EU = 1 + 3	158					
	5. Net Brain Gain = 3 – 2	- 82 =	- 82	+	0	+	0
			Stayers		**Brain Circulation**		
B.A. in RW = 211	**1. Remain in RW**	47 =	18	+	29		
(1 + 2)			**To U.S**		**To EU**		**To RW**
	2. Brain Drained	164 =	149	+	11	+	4
			From U.S.		**From EU**		**From EU**
	3. Brain Gain	19 =	4	+	11	+	4
	4. Current Job in RW = 1 + 3	66					
	5. Net Brain Gain = 3 – 2	- 145 =	- 145	-	0		

C. ELITE II

ORIGINS	DESTINATIONS		Stayers		Brain Circulation		
B.A. in U.S. = 192	**1. Remain in U.S.**	187 =	181	+	6		
(1 + 2)			**To EU**		**To RW**		
	2. Brain Drained	5 =	3	+	2		
			From EU		**From RW**		
	3. Brain Gain	83 =	28	+	55		
	4. Current Job in U.S. = 1 + 3	270					
	5. Net Brain Gain = 3 – 2	78 =	26	+	53		
			Stayers		**Brain Circulation**		
B.A. in EU = 73	**1. Remain in EU**	33 =	18	+	15		
(1 + 2)			**To U.S**		**To RW**	**To EU**	
	2. Brain Drained	40 =	28	+	5	+ 7	
			From U.S.		**From RW**	**From EU**	
	3. Brain Gain	11 =	3	+	1	+ 7	
	4. Current Job in EU = 1 + 3	44					
	5. Net Brain Gain = 3 – 2	- 29 =	- 25	-	4		
			Stayers		**Brain Circulation**		
B.A. in RW = 67	**1. Remain in RW**	11 =	6	+	5		
(1 + 2)			**To U.S**		**To EU**	**To RW**	
	2. Brain Drained	56 =	55	+	1	+ 0	
			From U.S.		**From EU**	**From RW**	
	3. Brain Gain	7 =	2	+	5	+ 0	
	4. Current Job in RW = 1 + 3	18					
	5. Net Brain Gain = 3 – 2	- 49 =	- 53	+	4		

D. ELITE I

ORIGINS	DESTINATIONS		Stayers		Brain Circulation		
B.A. in U.S. = 81	1. Remain in U.S.	79 =	74	+	5		
(1 + 2)			To EU		To RW		
	2. Brain Drained	2 =	2	+	0		
			From EU		From RW		
	3. Brain Gain	31 =	12	+	19		
	4. Current Job in U.S. = 1 + 3	110					
	5. Net Brain Gain = 3 – 2	29 =	10	+	19		
			Stayers		Brain Circulation		
B.A. in EU = 21	1. Remain in EU	8 =	5	+	3		
(1 + 2)			To U.S		To RW		To EU
	2. Brain Drained	13 =	12	+	0	+	1
			From U.S.		From RW		From EU
	3. Brain Gain	3 =	2	+	0	+	1
	4. Current Job in EU = 1 + 3	11					
	5. Net Brain Gain = 3 – 2 =	- 10 =	- 10	+	0		
			Stayers		Brain Circulation		
B.A. in RW = 21	1. Remain in RW	2 =	0	+	2		
(1 + 2)			To U.S		To EU		
	2. Brain Drained	19 =	19	+	0		
			From U.S.		From EU		
	3. Brain Gain	0 =	0	+	0		
	4. Current Job in RW = 1 + 3	2					
	5. Net Brain Gain = 3 – 2	- 19 =	- 19	-	0		

Table F. A comparison between the most highly cited mathematicians and economists in Elite II

A. The funneling effect towards the U.S.

	Mathematicians			Elite II		
	B.A.	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**
U.S.	112	198	233	192	263	270
EU	114	110	73	73	52	44
RW	87	29	31	67	16	18
Missing	24	-	-	-	1	-
Total	337	337	337	332	332	332

B. Nationality and Ph.D.

	Ph.D., Mathematicians				Ph.D., Elite II				
Nationality	**U.S.**	**EU**	**RW**	**Total**	**U.S.**	**EU**	**RW**	**Missing**	**Total**
U.S.	111	1	0	112	185	6	1	-	192
EU	23	91	0	114	28	39	5	1	73
RW	52	9	26	87	50	7	10	-	67
Missing	12	9	3	24	-	-	-	-	-
Total	198	110	29	337	263	52	16	1	332

C. Ph.D. and destinations

	Destinations, Mathematicians				Destinations, Elite II			
Ph.D.	**U.S.**	**EU**	**RW**	**Total**	**U.S.**	**EU**	**RW**	**Total**
U.S.	180	6	12	198	242	13	8	263
EU	37	65	8	110	22	27	3	52
RW	16	2	11	29	6	3	7	16
Missing	-	-	-	-	-	1	-	1
Total	233	73	31	337	270	44	18	332

D. Nationality and destinations

	Destinations, Mathematicians				Destinations, Elite II			
Nationality	**U.S.**	**EU**	**RW**	**Total**	**U.S.**	**EU**	**RW**	**Total**
U.S.	107	3	2	112	187	3	2	192
EU	50	62	2	114	28	40	5	73
RW	61	2	24	87	55	1	11	67
Missing	15	6	3	24	-	-	-	-
Total	233	73	31	337	270	44	18	332

D. Nationality and destinations

	Destinations, Mathematicians				Destinations, Elite II			
Nationality	**U.S.**	**EU**	**RW**	**Total**	**U.S.**	**EU**	**RW**	**Total**
U.S.	107	3	2	112	187	3	2	192
EU	50	62	2	114	28	40	5	73
RW	61	2	24	87	55	1	11	67
Total	218	67	28	313	270	44	18	332

Table G. The funneling effect for a partition of the world into the U.S., the European Union (EU), and the Rest of the World (RW) in the young people case

	Total Sample			Elite III		
A. People	**B.A.**	**Ph.D.**	**CJ**	**B.A.**	**Ph.D.**	**CJ**
U.S.	478	1,099	954	146	287	277
EU	769	544	643	135	82	84
RW	467	71	117	102	14	22
Missing	0	0	0	0	0	0
Total	1,714	1,714	1,714	383	383	383
B. Countries						
(besides the U.S.)						
EU	14	11	10	14	8	10
RW	46	12	7	19	4	7
Total	60	23	17	33	12	17
C. Quality Points						
Percentage Distribution						
U.S.		68.4			75.0	
EU		25.3			20.0	
RW		6.3			5.0	
Total		100.0			100.0	

CJ = Current Job In 2007

Table H. Institutions where elite university professors are trained in the young people case

TOTAL SAMPLE. Current job in 2007 at:

Ph.D. obtained in:	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
1. Harvard	36	48	13	3	**100**
2. MIT	39	52	11	1	**103**
1 + 2 =	75	100	24	4	**203**
3. Rest Top Ten U.S.	110	301	71	57	**539**
4. Other U.S.	36	229	69	23	**357**
TOTAL U.S.	221	360	164	84	**1,099**
5. EU	14	62	459	9	**544**
6. RW	3	24	20	24	**71**
TOTAL	**238**	**716**	**643**	**117**	**1,714**

ELITE III. Current job in 2007 at:

Ph.D. obtained in:	Top 10-U.S. (1)	Rest-U.S. (2)	EU (3)	RW (4)	TOTAL (5)
1. Harvard	18	17	4	0	**39**
2. MIT	24	13	12	0	**49**
1 + 2 =	42	30	16	0	**88**
3. Rest Top Ten U.S.	48	76	11	7	**142**
4. Other U.S.	11	46	5	5	**67**
TOTAL U.S.	101	152	32	12	**297**
5. EU	5	13	61	3	**82**
6. RW		6	1	7	**14**
TOTAL	**106**	**171**	**94**	**22**	**393**

Table I. Partition of the people originating in each geographical area into stayers and movers (brain circulation and brain drain), and partition of those working in each area in 2007 into nationals (stayers and brain circulation) and foreigners (brain gain) in the young people case

TOTAL SAMPLE

Area	Stayers (1)	Brain Circulation (2)	Brain Drain (3)	Total by origin = (1) + (2) + (3)	Brain Gain (4)	Working in the area in 2007 = (1) + (2) + (4)
U.S.	429	8	41	478	517	954
EU	291	98	380	769	254	643
RW	14	38	415	467	65	117
TOTAL	**734**	**144**	**836**	**1,714**	**836**	**1,714**

ELITE III

Area	Stayers (1)	Brain Circulation (2)	Brain Drain (3)	Total by origin = (1) + (2) + (3)	Brain Gain (4)	Working in the area in 2007 = (1) + (2) + (4)
U.S.	135	3	8	146	139	277
EU	41	17	77	135	26	84
RW	5	9	88	102	8	22
TOTAL	**181**	**29**	**173**	**383**	**173**	**383**

Table J. Nationalities in the young people's total sample

	Current job	Brain drain	Total	Percentage distribution
	(1)	(2)	(3)	(4)
A. Countries with some department in the sample				
1. U.S.	437	40	477	27.8%
European Union	377	260	637	37.2%
2. UK	89	45	134	
3. France	59	44	103	
4. Netherlands	86	12	98	
5. Spain	70	32	102	
6. Germany	11	66	77	
7. Belgium	27	24	51	
8. Denmark	24	17	41	
9. Sweden	20	10	30	
Rest of the World	53	129	182	10.6%
10. Canada	22	47	69	
11. Israel	19	32	51	
12. China	8	50	58	
A'. Econ. Society Fellows [a]	5	-	5	
B. Countries with no department in the sample		418	418	24.4%
13. Italy		98	98	
14. India		45	45	
15. Other countries [c]		275	275	
TOTAL		-	1,714	100.0%

[a] EU: Finland (1): RW: Japan (2), India (1), Norway (1)

[b] Turkey (29), South Korea (26), Argentina (23), Japan (22), Australia (19), Russia (19), Greece (12), Brazil (13), Switzerland (11), Portugal (10), Austria (7), Hungary (8), Chile (8), Ireland (8), México (8), Poland (5), Colombia (6), New Zeeland (1), Uruguay (4), Finland (1), Norway (2), Perú (3), Taiwan (3), Belarus (2), Costa Rica (2), Singapore (1), Other (31)

APPENDIX IV

MEMBERS OF ELITES I, II, AND III IN THE TOTAL SAMPLE

ELITE I

	Name	Q index	Nationality	Current Job		Name	Q index	Nationality	Current Job
1	Stiglitz, Joseph	5,135	U.S.	Columbia University	43	Fudenberg, Drew	1,568	U.S.	Harvard University
2	Samuelson, Paul	4,866	U.S.	MIT	44	Aghion, Philippe	1,553	France	Harvard University
3	Feldstein, Martin	4,089	U.S.	Harvard University	45	Sen, Amartya	1,547	India	Harvard University
4	Baumol, William	3,815	U.S.	New York University	46	Auerbach, Alan	1,532	U.S.	U. of Cal., Berkeley
5	Phillips, Peter	3,079	New Zealand	Yale University	47	Blundell, Richard	1,525	UK	Univ. College London
6	Turnovsky, Stephen	2,733	New Zealand	U. of Washington	48	Acemoglu, Daron	1,520	UK	MIT
7	Smith, Vernon	2,698	U.S.	George Mason U.	49	Hausman, Jerry	1,519	U.S.	MIT
8	Tirole, Jean	2,691	France	Toulouse University	50	Mankiw, Gregory	1,510	U.S.	Harvard University
9	Fisher, Franklin	2,637	U.S.	MIT	51	Plott, Charles	1,504	U.S.	Cal. Inst. of Technolo
10	Solow, Robert	2,580	U.S.	MIT	52	Becker, Gary	1,493	U.S.	University of Chicago
11	Ray, Debraj	2,489	India	New York University	53	List, John	1,464	U.S.	University of Chicago
12	Helpman, Elhanan	2,487	Israel	Harvard University	54	Ashenfelter, Orley	1,460	U.S.	Princeton University
13	Shleifer, Andrei	2,433	U.S.	Harvard University	55	Pesaran, Hashem	1,454	UK	U. of Southern Califo
14	Heckman, James	2,413	U.S.	University of Chicago	56	Mcallum, Bennett	1,451	U.S.	Carnegie Mellon U.
15	Chow, Gregory	2,260	U.S.	Princeton University	57	Viscusi, Kip	1,450	U.S.	Vanderbilt University
16	Barro, Robert	2,224	U.S.	Harvard University	58	Fama, Eugene	1,447	U.S.	University of Chicago
17	Arrow, Kenneth	2,184	U.S.	Stanford University	59	Epstein, Larry	1,445	Canada	Boston University
18	Zeckhauser,Richard	2,068	U.S.	John F. Kennedy School	60	Buchanan, James	1,433	U.S.	George Mason U.
19	Blanchard, Olivier	2,064	France	MIT	61	Engle, Robert	1,425	U.S.	U. of Cal., San Diego
20	Rosenzweig, Mark	2,056	U.S.	Yale University	62	Blackorby, Chuck	1,424	U.S.	University of Warwick
21	Diamond, Peter	2,043	U.S.	MIT	63	Deaton, Angus	1,424	UK	Princeton University
22	Dixit, Avinash	2,039	India	Princeton University	64	Besley, Tim	1,422	UK	LSE
23	Roth, Alvin	2,011	U.S.	Harvard University	65	Fair, Ray	1,411	U.S.	Yale University
24	Sargent, Thomas	1,982	U.S.	New York University	66	Murphy, Kevin	1,408	U.S.	University of Chicago
25	Razin, Assaf	1,908	Israel	Cornell University	67	Bernheim, Douglas	1,401	U.S.	Stanford University
26	Maskin, Eric	1,891	U.S.	Inst. of Adv. Studies	68	Newey, Whitney	1,392	U.S.	MIT
27	Jorgenson, Dale	1,873	U.S.	Harvard University	69	Krueger, Alan	1,391	U.S.	Princeton University
28	Poterba, James	1,845	U.S.	MIT	70	Williamson, Oliver	1,379	U.S.	U. of Cal., Berkeley
29	Andrews, Donald	1,780	Canada	Yale University	71	Schmalensee,Richard	1,374	U.S.	MIT
30	Weitzman, Martin	1,696	U.S.	Harvard University	72	Hamermesh, Daniel	1,365	U.S.	U. of Texas, Austin
31	Grossman, Gene	1,689	U.S.	Princeton University	73	Card, David	1,345	Canada	U. of Cal., Berkeley
32	Summers, Lawrence	1,670	U.S.	Harvard University	74	Hart, Oliver	1,344	UK	Harvard University
33	Schmidt, Peter	1,662	U.S.	Michigan State U.	75	Postlewaite, Andrew	1,333	U.S.	U. of Pennsylvania
34	Svensson, Lars	1,652	Sweden	Princeton University	76	Prescott, Edward	1,332	U.S.	Arizona State Univers
35	Alesina, Alberto	1,648	Italy	Harvard University	77	Lazear, Edward	1,330	U.S.	Stanford University
36	Shubik, Martin	1,619	Canada	Yale University	78	Phelps, Edmund	1,328	U.S.	Columbia University
37	Sheshinski, Eytan	1,606	Israel	Hebrew University	79	Lindbeck, Assar	1,324	Sweden	Stockholm University
38	Pollak, Robert	1,603	U.S.	Washington U., St Louis	80	Robinson, Peter	1,319	UK	LSE
39	Lewis, Tracy	1,599	U.S.	Duke University	81	Kagel, John	1,318	U.S.	Ohio State University
40	Samuelson, Larry	1,589	U.S.	Yale University	82	Campbell, John	1,314	UK	Harvard University
41	Akerlof, George	1,583	U.S.	U. of Cal., Berkeley	83	Kremer, Michael	1,311	U.S.	Harvard University
42	Calvo, Guillermo	1,574	Argentina	Columbia University	84	Freeman, Richard	1,303	U.S.	Harvard University

85	Manski, Charles	1,301	U.S.	Northwestern University	105	Jones, Ronald	1,223	U.S.	University of Rochest
86	Glaeser, Edward	1,298	U.S.	Harvard University	106	Wright, Randall	1,221	Canada	U. of Pennsylvania
87	Milgrom, Paul	1,297	U.S.	Stanford University	107	Laroque, Guy	1,218	France	Univ. College London
88	Jackson, Matthew	1,297	U.S.	Stanford University	108	Crawford, Vincent	1,214	U.S.	U. of Cal., San Diego
89	Lucas, Robert	1,296	U.S.	University of Chicago	109	Green, Jerry	1,212	U.S.	Harvard University
90	Jovanovic, Boyan	1,295	UK	New York University	110	Granger, Clive	1,211	UK	U. of Cal., San Diego
91	Smith, Kerry	1,286	U.S.	Arizona State University	111	Cutler, David	1,207	U.S.	Harvard University
92	Bhagwati, Jagdish	1,284	UK	Columbia University	112	Kotlikoff, Laurence	1,202	U.S.	Boston University
93	Caballero, Ricardo	1,282	Chile	MIT	113	Dreze, Jacques	1,202	Belgium	CORE, Belgium
94	Nordhaus, William	1,279	U.S.	Yale University	114	Palfrey, Thomas	1,200	U.S.	Cal. Institute of Tech.
95	Gordon, Robert	1,273	U.S.	Northwestern University	115	Katz, Lawrence	1,199	U.S.	Harvard University
96	Levine, David	1,268	U.S.	Washington U., St Louis	116	Bardhan, Pranab	1,193	India	U. of Cal., Berkeley
97	Obstfeld, Maurice	1,265	U.S.	U. of Cal., Berkeley	117	Rosen, Harvey	1,190	U.S.	Princeton University
98	Abel, Andrew	1,262	U.S.	U. of Pennsylvania	118	Diewert, Erwin	1,188	Canada	U. of British Columbi
99	Karni, Edi	1,254	Israel	Johns Hopkins	119	Stein, Jeremy	1,187	U.S.	Harvard University
100	Hendry, David	1,252	UK	Oxford University	120	Howitt, Peter	1,186	Canada	Brown University
101	White, Halbert	1,246	U.S.	U. of Cal., San Diego	121	Lee, Lung-Fei	1,182	China	Ohio State University
102	Behrman, Jere	1,243	U.S.	U. of Pennsylvania	122	Diebold, Francis	1,179	U.S.	U. of Pennsylvania
103	Nickell, Stephen	1,242	UK	Oxford University	123	Polemarchakis,Herakles	1,170	U.S.	University of Warwick
104	Rubinstein, Ariel	1,240	Israel	New York University					

ELITE II

	Name	Q index	Nationality	Current Job		Name	Q index	Nationality	Current Job
124	Mas-Colell, Andreu	1,161	Spain	U. Pompeu Fabra	152	Kurz, Mordecai	1,053	Israel	Stanford University
125	Leamer, Edward	1,158	U.S.	U. of California, LA	153	Shiller, Robert	1,052	U.S.	Yale University
126	Slemrod, Joel	1,156	U.S.	University of Michigan	154	Harberger, Arnold	1,048	U.S.	U. of California, LA
127	Siegfried, John	1,153	U.S.	Vanderbilt University	155	Persson, Torsten	1,041	Sweden	LSE
128	Borjas, George	1,152	U.S.	J. F. Kennedy School	156	Chiappori, P.A.	1,035	France	Columbia University
129	Rotemberg, Julio	1,150	U.S.	Harvard University	157	Sadka, Efraim	1,027	Israel	University of Tel Aviv
130	Stock, James	1,147	U.S.	Harvard University	158	Scheinkman, José	1,026	Brazil	Princeton University
131	Weisbrod, Burton	1,145	U.S.	Northwestern University	159	Gruber, Jonathan	1,022	U.S.	MIT
132	Cooper, Russell	1,144	U.S.	U. of Texas, Austin	160	Sandmo, Agnar	1,017	Norway	Norwegian Sch. of Ecs.
133	Judd, Kenneth	1,141	U.S.	Hover Institution	161	Dufour, Jean-Marie	1,016	Canada	McGill University
134	Srinivasan, T.N.	1,140	India	Yale University	162	Mookherjee, Dilip	1,001	India	Boston University
135	Lewbel, Arthur	1,139	U.S.	Boston College	163	Rogoff, Kenneth	997	U.S.	Harvard University
136	Gale, Douglas	1,122	Canada	New York University	164	Pissarides, Ch.	996	UK	LSE
137	Dasgupta, Partha	1,116	India	Cambridge University	165	Shavell, Steven	994	U.S.	Harvard Law School
138	Blinder, Alan	1,112	U.S.	Princeton University	166	Sappington, David	991	U.S.	University of Florida
139	Moulin, Hervé	1,111	France	Rice University	167	Holmström, Bengt	990	Finland	MIT
140	Mitra, Tapan	1,100	India	Cornell University	168	Currie, Janet	988	Canada	Columbia University
141	Nerlove, Marc	1,090	U.S.	U. of Maryland	169	Eaton, Jonathan	984	U.S.	New York University
142	Wolpin, Kenneth	1,089	U.S.	U. of Pennsylvania	170	Sandler, Todd	983	U.S.	U. of Southern California
143	Holt, Charles	1,085	U.S.	University of Virginia	171	Kreinin, Mordechai	979	Israel	Michigan State U.
144	Pattanaik, Prasanta	1,079	India	U. California, Riverside	172	Neary, J.Peter	979	Ireland	Oxford University
145	McAfee, R.-Preston	1,078	U.S.	Cal. Institute of Tech.	173	Hansen, Lars	979	U.S.	University of Chicago
146	Nelson, Charles	1,076	U.S.	U. of Washington	174	Kiefer, Nicholas	975	U.S.	Cornell University
147	Newbery, David	1,076	UK	Cambridge University	175	Levitt, Steven	968	U.S.	University of Chicago
148	Kehoe, Patrick	1,072	U.S.	University of Minnesota	176	Horowitz, Joel	966	U.S.	Northwestern University
149	Roberts, D. John	1,071	Canada	Stanford University	177	Brock, William	964	U.S.	U. of Wisconsin, Mad.
150	Baron, David	1,061	U.S.	Stanford University	178	Morris, Stephen	961	UK	Princeton University
151	Shapiro, Carl	1,054	U.S.	U. of Cal., Berkeley	179	Sonnenschein, Hugo	960	U.S.	University of Chicago

180	Taylor, John	958	U.S.	Stanford University
181	Burmeister, Edwin	957	U.S.	Duke University
182	Bolton, Patrick	955	France	Columbia University
183	Bergstrom, Ted	952	U.S.	U. of Cal., Santa Barbara
184	Farrell, Joseph	951	UK	U. of Cal., Berkeley
185	Varian, Hal	950	U.S.	U. of Cal., Berkeley
186	Moffitt, Robert	948	U.S.	Johns Hopkins
187	Friedman, Benjamin	948	U.S.	Harvard University
188	Panzar, John	947	U.S.	Northwestern University
189	Townsend, Robert	939	U.S.	University of Chicago
190	Romer, David	939	U.S.	U. of Cal., Berkeley
191	Eichenbaum, Martin	938	Canada	Northwestern University
192	Edwards, Sebastian	934	Chile	U. of California, LA
193	Berndt, Ernst	933	U.S.	University of Chicago
194	Cooley, Thomas	933	U.S.	New York University
195	Banerjee, Abhijit	929	India	MIT
196	Wise, David	928	U.S.	J. F. Kennedy School
197	Imbens, Guido	926	Netherlands	Harvard University
198	Ehrenberg, Ronald	920	U.S.	Cornell University
199	Schmeidler, David	918	U.S.	Ohio State University
200	McFadden, Daniel	912	U.S.	U. of Cal., Berkeley
201	Levin, Dan	911	Israel	Ohio State University
202	Aumann, Robert	910	U.S.	Hebrew University
203	Sachs, Jeffrey	903	U.S.	Columbia University
204	Atkinson, Tony	902	UK	Oxford University
205	Feenstra, Robert	898	Canada	U. California, Davis
206	Zilcha, Itzhak	897	Israel	University of Tel Aviv
207	Honkapohja, Seppo	895	Finland	Cambridge University
208	Saving, Thomas	895	U.S.	Texas A and M
209	Basu, Kaushik	894	India	Cornell University
210	Sims, Christopher	892	U.S.	Princeton University
211	Pestieau, Pierre	890	Belgium	Catholic U. of Louvain
212	Spence, Michael	889	U.S.	Stanford University
213	Bovenberg, Lans	888	Netherlands	Tilburg University
214	Krueger, Anne	887	U.S.	Johns Hopkins
215	King, Robert	887	U.S.	Boston University
216	Burdett, Kenneth	885	UK	U. of Pennsylvania
217	Myerson, Roger	884	U.S.	University of Chicago
218	Gourieroux, Ch.	883	France	University of Toronto
219	Gallant, Ronald	883	U.S.	Duke University
220	Malcomson, James	883	UK	Oxford University
221	Radner, Roy	882	U.S.	New York University
222	MacKinnon, James	882	UK	Queen's University
223	Angrist, Joshua	875	U.S.	MIT
224	Coate, Steve	871	UK	Cornell University
225	Browning, Martin	870	UK	Oxford University
226	Bulow, Jeremy	869	U.S.	Stanford University
227	Keane, Michael	869	U.S.	U. of New South Wales
228	Caplin, Andrew	864	UK	New York University
229	Matsuyama, K.	862	Japan	Northwestern University
230	Duffie, Darrell	859	Canada	Stanford University
231	Shoven, John	850	U.S.	Stanford University
232	Benabou, Roland	850	France	Princeton University
233	Rochet, Jean-Charles	849	France	Toulouse University
234	Hellwig, Martin F.	842	Germany	University of Bonn
235	West, Kenneth	841	U.S.	U. of Wisconsi
236	Pakes, Ariel	839	Israel	Harvard University
237	Hsiao, Cheng	835	Taiwan	U. of Southern Cal.
238	Goldin, Claudia	833	U.S.	Harvard University
239	Taylor, Mark	831	UK	University of Warwick
240	Rustichini, Aldo	828	Italy	University of Minnesota
241	Hall, Robert	828	U.S.	Stanford University
242	Benhabib, Jess	827	Turkey	New York University
243	Joskow, Paul	824	U.S.	MIT
244	Mirman, Leonard	822	U.S.	University of Virginia
245	Davidson, Rusell	819	UK	Aix-en-Provenze
246	Galor, Oded	818	Israel	Brown University
247	Salant, Stephen	815	U.S.	University of Michigan
248	Wilson, Robert	806	U.S.	Stanford University
249	Day, Richard	804	U.S.	U. of Southern Cal.
250	Haltiwanger, John	801	U.S.	University of Maryland
251	Gertler, Mark	801	U.S.	New York University
252	Williamson, Jeffrey	801	U.S.	Harvard University
253	Guesnerie, Roger	798	France	EHESS - Paris
254	Vives, Xavier	798	Spain	IESE
255	Scotchmer, Suzanne	796	U.S.	U. of Cal., Berkeley
256	Malkiel, Burton	796	U.S.	Princeton University
257	Oswald, Andrew	794	UK	University of Warwick
258	Chichilnisky, G.	793	Argentina	Columbia University
259	Boadway, Robin	792	Canada	Queen's University
260	Willig, Robert	792	U.S.	Princeton University
261	Shapiro, Matthew	791	U.S.	University of Michigan
262	Laitner, John	790	U.S.	University of Michigan
263	Henderson, Vernon	788	Canada	Brown University
264	Cooper, Richard	786	U.S.	Harvard University
265	Riley, John	785	New Zeeland	U. of California, LA
266	Krugman, Paul	785	U.S.	Princeton University
267	Trivedi, Pravin	783	UK	University of Indiana
268	Roll, Richard	781	U.S.	U. of California, LA
269	Boskin, Michael	780	U.S.	Stanford University
270	Kalai, Ehud	779	U.S.	Northwestern University
271	Shell, Karl	779	U.S.	Cornell University
272	Fullerton, Don	777	U.S.	U. of Texas, Austin
273	Ours, Jan-van	776	Netherlands	Tilburg University
274	Peleg, Bezalel	776	Israel	Hebrew University
275	Anderson, James	776	U.S.	Boston College
276	Crémer, Jacques	775	France	Toulouse University
277	Kelejian, Harry	774	U.S.	University of Maryland
278	Bernhardt, Dan	774	U.S.	U. of Illinois, Urbana
279	Martimort, David	772	France	Toulouse University
280	Hubbard, Robert	771	U.S.	Columbia University
281	Thomson, William	769	U.S.	University of Rochester
282	Bossert, Walter	768	Germany	University of Montreal
283	Klein, Lawrence	767	U.S.	U. of Pennsylvania
284	Wakker, Peter	767	Netherlands	Erasmus University
285	Rubinfeld, Daniel	765	U.S.	U. of Cal., Berkeley

286	Camerer, Colin	765	U.S.	Cal. Inst. of Technology
287	Mailath, George	763	Australia	U. of Pennsylvania
288	Rogerson, Richard	762	Canada	Arizona State University
289	Gordon, Roger	762	U.S.	U. of Cal., San Diego
290	Franses, Philip-Hans	761	U.S.	Erasmus University
291	Neumark, David	760	U.S.	U. of California, Irvine
292	Moore, John	759	UK	U. Edinburgh, Scotland
293	Greenwood, Jeremy	758	Canada	U. of Pennsylvania
294	Ng, Serena	758	Canada	Columbia University
295	Pencavel, John	756	UK	Stanford University
296	Yitzhaki, Shlomo	753	Israel	Hebrew University
297	Quigley, John	750	U.S.	U. of Cal., Berkeley
298	Bourguignon, F.	749	France	EHESS - Paris
299	Drazen, Allan	747	U.S.	University of Maryland
300	Binmore, Kenneth	746	UK	Univ. College London
301	Chari, V.V.	745	India	University of Minessota
302	Schotter, Andrew	745	U.S.	New York University
303	Chipman, John	745	Canada	University of Minessota
304	Hart, Sergiu	744	Israel	Hebrew University
305	Nishimura, Kazuo	744	Japan	Kyoto University, Japan
306	Bagwell, Kyle	741	U.S.	Columbia University
307	Geanakoplos, John	739	U.S.	Yale University
308	Perron, Pierre	737	Canada	Boston University
309	Greenaway, David	737	UK	U. of Nottingham
310	Anderson, Simon	736	UK	University of Virginia
311	Sloan, Frank	735	U.S.	Duke University
312	Qi, Li	735	China	Texas A and M
313	Hammond, Peter	733	UK	University of Warwick
314	Christiano, Lawrence	732	U.S.	Northwestern University
315	Engel, Charles	731	U.S.	U. of Wisconsin, Mad.
316	Dhrymes, Phoebus	729	U.S.	Columbia University
317	Linton, Oliver	728	UK	LSE
318	D'Aspremont, C.	728	Belgium	Catholic U. of Louvain
319	Dekel-Tabak, Eddie	728	Israel	Northwestern University
320	Luetkepohl, Helmut	726	Germany	European Institute
321	Ghysels, Eric	724	Belgium	U. of North Carolina
322	Gilbert, Richard	723	U.S.	U. of Cal., Berkeley
323	Jehiel, Philippe	722	France	Univ. College London
324	Wolff, Edward	719	U.S.	New York University
325	Temin, Peter	715	U.S.	MIT
326	Ethier, Wilfred	715	U.S.	U. of Pennsylvania
327	Devereux, Michael	714	Ireland	U. of British Columbia
328	Riordan, Michael	714	U.S.	Columbia University
329	MacDonald, Glenn	714	Canada	Washington U., St Louis
330	MacLeod, W.	712	Canada	Columbia University
331	Eichengreen, Barry	710	U.S.	U. of Cal., Berkeley
332	Van-der-Ploeg, Rick	709	UK	European Institute

ELITE III

	Name	Q index	Nationality	Current Job
333	Richard, Jean-Francois	706	Belgium	University of Pittsburgh
334	Cass, David	706	U.S.	U. of Pennsylvania
335	Katz, Michael	705	U.S.	U. of Cal., Berkeley
336	Timmermann, Allan	705	UK	U. of Cal., San Diego
337	Smith, Richard	701	UK	Cambridge University
338	Stoker, Thomas	697	U.S.	MIT
339	Reinganum, Jennifer	696	U.S.	Vanderbilt University
340	Judge, George	696	U.S.	U. of Cal., Berkeley
341	Hansen, Bruce	695	U.S.	U. of Wisconsin
342	Glazer, Amihai	694	U.S.	U. of California, Irvine
343	Bollerslev, Tim	694	Denmark	Duke University
344	Hildenbrand, Werner	692	Germany	University of Bonn
345	Kahneman, Daniel	690	Israel	Princeton University
346	Layard, Richard	690	UK	LSE
347	Kirman, Alan	689	UK	Aix-en-Provenze, France
348	Hamilton, James	689	U.S.	U. of Cal., San Diego
349	Gul, Faruk	687	Turkey	Princeton University
350	Rabin, Matthew	686	U.S.	U. of Cal., Berkeley
351	Klemperer, Paul	685	UK	Oxford University
352	Zame, William	685	U.S.	Columbia University
353	Stern, Nicholas	684	UK	LSE
354	Rothschild, Michael	683	U.S.	Princeton University
355	Andreoni, James	683	U.S.	U. of Cal., San Diego
356	Hahn, Jinyong	683	South Korea	U. of California, LA
357	Meghir, Costas	682	UK	Univ. College London
358	Oates, Wallace	682	U.S.	University of Maryland
359	Barberà, Salvador	681	Spain	U. Autónoma, Barcelona
360	Sobel, Joel	681	U.S.	U. of Cal., San Diego
361	Deardorff, Alan	681	U.S.	University of Michigan
362	Rebelo, Sergio	679	Portugal	Northwestern University
363	Le-Breton, Michel	679	France	Toulouse University
364	Wallace, Neil	678	U.S.	PA State University
365	Bresnahan, Timothy	677	U.S.	Stanford University
366	Poirier, Dale	675	U.S.	U. of California, Irvine
367	Sutton, John	674	Ireland	LSE
368	Whinston, Michael	672	U.S.	Northwestern University
369	Sala-i-Martin, Xavier	671	Spain	Columbia University
370	Barzel, Yoram	670	Israel	U. of Washington
371	Segal, Uzi	669	Israel	Boston College
372	Goeree, Jacob	666	Netherlands	CA Institute of Tech.
373	Kapteyn, A.	662	Netherlands	Tilburg University
374	Nugent, Jeff	661	U.S.	U. of Southern California
375	Wolinsky, Asher	660	Israel	Northwestern University
376	Ball, Laurence	658	U.S.	Johns Hopkins

377	Shin, Hyun	658	UK	Princeton University
378	Koenker, Roger	658	U.S.	U. of Illinois, Urbana
379	Roland, Gérard	655	Belgium	U. of Cal., Berkeley
380	Ellison, Glenn	655	U.S.	MIT
381	Gilboa, Itzhak	655	Israel	University of Tel Aviv
382	Ramsey, James	654	Canada	New York University
383	Saint-Paul, Gilles	653	France	Toulouse University
384	Fernandez, Raquel	652	U.S.	New York University
385	Cochrane, John	652	U.S.	University of Chicago
386	Azariadis, Costas	651	Greece	Washington U., St Louis
387	Wolfe, Barbara	651	U.S.	U. of Wisconsin
388	Reny, Philip	650	Canada	University of Chicago
389	Durlauf, Steven	648	U.S.	U. of Wisconsin
390	Nadiri, M.	647	U.S.	New York University
391	Machin, Stephen	647	UK	Univ. College London
392	Blank, Rebecca	647	U.S.	University of Michigan
393	Moldovanu, Benny	645	Israel	University of Bonn
394	Tauchen, George	642	U.S.	Duke University
395	Muellbauer, John	641	UK	Oxford University
396	Peters, Mike	639	Canada	U. of British Columbia
397	Solon, Gary	638	U.S.	Michigan State U.
398	Brueckner, Jan	638	U.S.	U. of California, Irvine
399	Fuller, Wayne	637	U.S.	Iowa State University
400	Venables, Tony	634	UK	Oxford University
401	Fershtman, Chaim	633	Israel	University of Tel Aviv
402	Che, Yeon-Koo	631	South Korea	Columbia University
403	Leiderman, Leonardo	628	Israel	University of Tel Aviv
404	Qian, Yingyi	628	China	U. of Cal., Berkeley
405	Bisin, Alberto	627	Italy	New York University
406	Stokey, Nancy	627	U.S.	University of Chicago
407	Balasko, Yves	626	France	University of York
408	Dolado, Juanjo	623	Spain	U. Carlos III
409	Shapley, Lloyd	623	U.S.	U. of California, LA
410	Loury, Glenn	621	U.S.	Brown University
411	Gollier, Christian	620	Belgium	Toulouse University
412	Godfrey, Leslie	620	UK	University of York
413	Brown, Donald	619	U.S.	Yale University
414	Epple, Dennis	619	U.S.	Carnegie Mellon U.
415	Ridder, Geert	616	Netherlands	U. of Southern California
416	Harrington, Joseph	614	U.S.	Johns Hopkins
417	Thompson, Earl	613	U.S.	U. of California, LA
418	Wickens, Michael	610	UK	University of York
419	Attanasio, Orazio	609	Italy	Univ. College London
420	Levine, Ross	609	U.S.	Brown University
421	Chamberlain, Gary	607	U.S.	Harvard University
422	Lang, Kevin	606	UK	Boston University
423	Tower, Edward	603	U.S.	Duke University
424	Leahy, John	601	U.S.	New York University
425	Lapan, Harvey	600	U.S.	Iowa State University
426	van-den-Berg, Gerard	600	Netherlands	Free U. of Amsterdam
427	Majumdar, Mukul	599	India	Cornell University
428	Shi, Shouyong	596	China	Jniversity of Toronto
429	Galí, Jordi	596	Spain	J. Pompeu Fabra
430	Eden, Ben	596	Israel	Vanderbilt University
431	Lockwood, Ben	595	UK	University of Warwick
432	Cowell, Frank	595	UK	LSE
433	Stahl, Dale	594	U.S.	U. of Texas, Austin
434	Mundlak, Yair	592	U.S.	Hebrew University
435	Altonji, Joseph	591	U.S.	Yale University
436	McKinnon, Ronald	591	Canada	Stanford University
437	Benassy, Jean Pascal	590	France	CEPREMAP, France
438	Hamada, Koichi	590	Japan	Yale University
439	Krusell, Per	589	Sweden	Princeton University
440	Cremer, Helmuth	588	Belgium	Toulouse University
441	Singleton, Kenneth	587	U.S.	Stanford University
442	Rogerson, William	587	Canada	Northwestern University
443	Kehoe, Timothy	587	U.S.	University of Minnesota
444	Sickles, Robin	586	U.S.	Rice University
445	Mundell, Robert	585	Canada	Columbia University
446	Gibbons, Robert	585	U.S.	MIT
447	Staiger, Robert	584	U.S.	Stanford University
448	Suzumura, Kotaro	582	Japan	Hitotsubashi University
449	Rey, Patrick	581	France	Toulouse University
450	Portes, Richard	580	U.S.	London Business Schoo
451	Bond, Eric	580	U.S.	Vanderbilt University
452	Kelley, Allen	579	U.S.	Duke University
453	Thurow, Lester	579	U.S.	MIT
454	Powell, James	576	U.S.	U. of Cal., Berkeley
455	Hinich, Melvin	574	U.S.	U. of Texas, Austin
456	Skinner, Jonathan	571	U.S.	Dartmouth College
457	Eckstein, Zvi	571	Israel	University of Minnesota
458	Weymark, John	569	Canada	Vanderbilt University
459	Diamond, Douglas	567	U.S.	University of Chicago
460	Vuong, Quang	567	France	PA State University
461	Shaked, Avner	567	Israel	University of Bonn
462	Morgan, John	566	U.S.	U. of Cal., Berkeley
463	Moretti, Enrico	566	Italy	U. of Cal., Berkeley
464	Kocherlakota,Narayana	565	U.S.	University of Minnesota
465	Young, Peyton	563	U.S.	Oxford University
466	Costa, Dora	560	U.S.	U. of California, LA
467	Wooldridge, Jeffrey	559	U.S.	Michigan State U.
468	Grant, Simon	556	Australia	Rice University
469	Blume, Lawrence	556	U.S.	Cornell University
470	Woodland, Alan	555	Australia	U. of New South Wales
471	van-der-Klundert, T.	555	Netherlands	Tilburg University
472	Jones, Charles	554	U.S.	U. of Cal., Berkeley
473	Paxson, Christina	553	U.S.	Princeton University
474	Serrano, Roberto	550	Spain	Brown University
475	Adelman, Irma	549	U.S.	U. of Cal., Berkeley
476	Cropper, Maureen	548	U.S.	University of Maryland
477	Harvey, Andrew	546	UK	Cambridge University
478	Kolm, Serge-Christ.	546	France	EHESS - Paris

479	Slade, Margaret	542	U.S.	niversity of Warwick
480	Satterthwaite, Mark	541	U.S.	orthwestern University
481	Klevorick, Alvin	541	U.S.	ale University
482	Perry, Motty	541	Israel	versity of Essex
483	Easley, David	540	U.S.	Cornell University
484	Yellen, Janet	539	U.S.	U. of Cal., Berkeley
485	Wilson, John	538	U.S.	Michigan State U.
486	Case, Anne	536	U.S.	Princeton University
487	Abreu, Dilip	535	India	Princeton University
488	Porter, Robert	535	Canada	Northwestern University
489	Burkhauser, Richard	535	U.S.	Cornell University
490	Harris, Milton	534	U.S.	University of Chicago
491	Kanbur, Ravi	533	UK	Cornell University
492	Woodford, Michael	531	U.S.	Columbia University
493	Startz, Richard	531	U.S.	U. of Washington
494	Beaudry, Paul	529	Canada	U. of British Columbia
495	Baillie, Richard	529	UK	Michigan State U.
496	Bound, John	529	U.S.	University of Michigan
497	Wooders, Myrna	528	Canada	University of Warwick
498	Canova, Fabio	526	Italy	U. Pompeu Fabra
499	Ordover, Janusz	524	Poland	New York University
500	Mortensen, Dale	523	U.S.	Northwestern University
501	Easterly, William	522	U.S.	New York University
502	Canzoneri, Matthew	522	U.S.	Georgetown University
503	Driskill, Robert	521	U.S.	Vanderbilt University
504	Reinhart, Carmen	521	U.S.	University of Maryland
505	Dybvig, Philip	521	U.S.	Washington U., St Louis
506	Todd, Petra	519	U.S.	U. of Pennsylvania
507	Vohra, Rajiv	519	India	Brown University
508	Cole, Harold	518	U.S.	U. of Pennsylvania
509	Whiteman, Charles	517	U.S.	University of Iowa
510	Jones, Larry	517	U.S.	University of Minnesota
511	Thomas, Jonathan	516	Netherlands	U. Edinburgh, Scotland
512	Hartwick, John	515	Canada	Queen's University
513	Schelling, Thomas	515	U.S.	University of Maryland
514	Bryant, John	514	U.S.	Rice University
515	Bordo, Michael	513	Canada	Rutgers University
516	Roemer, John	513	U.S.	Yale University
517	Hayasi, Fumio	512	Japan	University of Tokyo
518	Noussair, Charles	509	U.S.	Tilburg University
519	Duflo, Esther	509	France	MIT
520	Falvey, Rod	508	New Zealand	U. of Nottingham
521	Berry, Steven	507	U.S.	Yale University
522	Matthews, Steven	507	U.S.	U. of Pennsylvania
523	Krishna, Kala	507	India	PA State University
524	Dusanski, Richard	506	U.S.	U. of Texas, Austin
525	Maggi, Giovanni	506	Italy	Yale University
526	Svejnar, Jan	505	U.S.	University of Michigan
527	Yannelis, Nicholas	504	Greece	U. of Illinois, Urbana
528	Wan, Henry	503	China	Cornell University
529	Dubey, Pradeep	502	India	SUNY, Stony Brook
530	Chesher, Andrew	502	UK	Univ. College London
531	Swinkels, Jeroen	502	Canada	Washington U., St Louis
532	Brown, Charles	501	U.S.	University of Michigan
533	Weil, David	501	U.S.	Brown University
534	Bai, Jushan	498	China	New York University
535	Gahvari, Firouz	498	U.S.	U. of Illinois, Urbana
536	Magnus, J.R.	495	Netherlands	Tilburg University
537	Zhou, Lin	495	China	Arizona State University
538	Harris, Christopher	493	UK	Cambridge University
539	Robert C. Merton	492	U.S.	Harvard University
540	Johnson, William	491	U.S.	University of Virginia
541	Samet, Dov	489	Israel	University of Tel Aviv
542	Sheffrin, Steven	489	U.S.	U. California, Davis
543	Wang, Ping	488	Taiwan	Washington U., St Louis
544	Margo, Robert	487	U.S.	Boston University
545	Pesendorfer, W.	487	Austria	Princeton University
546	Tian, Guoqiang	486	China	Texas A and M
547	Stafford, Frank	485	U.S.	University of Michigan
548	Hines, James	485	U.S.	University of Michigan
549	Kornai, Janos	485	Hungary	Harvard University
550	Hopenhayn, Hugo	484	Argentina	U. of California, LA
551	Van-Reenen, John	483	UK	LSE
552	Kiyotaki, Nobuhiro	483	Japan	Princeton University
553	Vickers, John	482	UK	Oxford University
554	Engel, Eduardo	481	Chile	Yale University
555	Romano, Richard	481	U.S.	University of Florida
556	Levinsohn, James	481	U.S.	University of Michigan
557	Mayshar, Joram	480	Israel	Hebrew University
558	Eeckhoudt, Louis	479	Belgium	Catholic U. of Louvain
559	Lee, Ronald	479	U.S.	U. of Cal., Berkeley
560	Putterman, Louis	479	U.S.	Brown University
561	Ok, Efe	479	Turkey	New York University
562	van-Damme, Eric	478	Netherlands	Tilburg University
563	Ham, John	477	Canada	U. of Southern California
564	Smith, Jeffrey	476	U.S.	University of Michigan
565	Wallis, Kenneth	474	UK	University of Warwick
566	Honore, Bo	474	Denmark	Princeton University
567	Gronau, Reuben	474	Israel	Hebrew University
568	Quah, Danny	474	U.S.	LSE
569	Bronars, Stephen	474	U.S.	U. of Texas, Austin
570	Sonmez, Tayfun	473	Turkey	Boston College
571	Romer, Christina	473	U.S.	U. of Cal., Berkeley
572	Anderson, Robert	470	Canada	U. of Cal., Berkeley
573	Betancourt, Roger	469	U.S.	University of Maryland
574	Gottschalk, Peter	469	U.S.	Boston College
575	Chib, Siddhartha	468	India	Washington U., St Louis
576	Greenstone, Michael	468	U.S.	MIT
577	Starr, Ross	468	U.S.	U. of Cal., San Diego
578	Prucha, Ingmar	466	Austria	University of Maryland
579	Cason, Timothy	465	U.S.	Purdue University
580	Hulten, Charles	464	U.S.	University of Maryland

581	Leybourne, Steve	462	UK	U. of Nottingham
582	Ramey, Garey	462	U.S.	U. of Cal., San Diego
583	Evans, Paul	461	U.S.	Ohio State University
584	Farmer, Roger	461	UK	U. of California, LA
585	Kennan, John	461	Irland	U. of Wisconsin
586	Moreaux, Michel	460	France	Toulouse University
587	Lizzeri, Alessandro	460	Italy	New York University
588	Carroll, Christopher	459	U.S.	Johns Hopkins
589	Autor, David	458	U.S.	MIT
590	Huck, Steffen	457	Germany	Univ. College London
591	Fields, Gary	457	U.S.	Cornell University
592	Siow, Aloysius	456	U.S.	University of Toronto
593	Hanson, Gordon	454	U.S.	U. of Cal., San Diego
594	Ríos-Rull, José-Víctor	453	Spain	University of Minnesota
595	Darby, Michael	452	U.S.	U. of California, LA
596	Segal, Ilya	452	Russia	Stanford University
597	Merlo, Antonio	451	Italy	U. of Pennsylvania
598	Ramey, Valerie	451	U.S.	U. of Cal., San Diego
599	Daughety, Andrew	451	U.S.	Vanderbilt University
600	Kimball, Miles	450	U.S.	University of Michigan
601	Laibson, David	450	U.S.	Harvard University
602	Guilkey, David	450	U.S.	U. of North Carolina
603	Vogelsang, Timothy	449	U.S.	Michigan State U.
604	Gaudet, Gérard	448	Canada	University of Montreal
605	Silvestre, Joaquim	446	Spain	U. California, Davis
606	Pesando, James	446	Canada	University of Toronto
607	Park, Joon	446	South Korea	Texas A and M
608	Ohanian, Lee	445	U.S.	U. of California, LA
609	Lipman, Barton	445	U.S.	Boston University
610	Hay, George	444	U.S.	Cornell University
611	Cornes, Richard	443	UK	U. of Nottingham
612	Mullainathan, Sendhil	443	U.S.	Harvard University
613	Kimbrough, Kent	442	U.S.	Duke University
614	Klenow, Pete	442	U.S.	Stanford University
615	Swanson, Norman	442	Canada	Rutgers University
616	Ito Takatoshi	441	Japan	University of Tokyo
617	Grabowski, Henry	441	U.S.	Duke University
618	Becker, Robert	441	U.S.	University of Indiana
619	Fan, Jianqing	441	China	Princeton University
620	Guiso, Luigi	440	Italy	European Institute
621	Selten, Reinhard	439	Germany	University of Bonn
622	Clarida, Richard	439	U.S.	Columbia University
623	Thomas, Duncan	437	UK	U. of California, LA
624	Athey, Susan	436	U.S.	Harvard University
625	Lo, Andrew	436	U.S.	MIT
626	Barron, John	436	U.S.	Purdue University
627	Klepper, Steven	433	U.S.	Carnegie Mellon U.
628	Ireland, Norman	432	UK	University of Warwick
629	Winter, Eyal	431	Israel	Hebrew University
630	Elliott, Graham	431	Australia	U. of Cal., San Diego
631	Choi, Jay	430	South Korea	Michigan State U.
632	Matsushima, Hitoshi	430	Japan	University of Tokyo
633	Holmes, Thomas	429	U.S.	University of Minnesota
634	Hendricks, Kenneth	428	Canada	U. of Texas, Austin
635	Schiantarelli, Fabio	426	Italy	Boston College
636	Santos-Silva, João	426	Portugal	University of Essex
637	Coles, Melvyn	425	UK	University of Essex
638	Pasinetti, Luigi	424	Italy	Catholic U. Milan, Italy
639	Williamson, Stephen	424	Canada	Washington U., St Louis
640	Huffman, Wallace	423	U.S.	Iowa State University
641	Shapiro, Harold	422	Canada	Princeton University
642	Machina, Mark	421	U.S.	U. of Cal., San Diego
643	Manning, Alan	420	UK	LSE
644	Bils, Mark	420	U.S.	University of Rochester
645	Duffy, John	419	U.S.	University of Pittsburgh
646	Winter, Sidney	418	U.S.	U. of Pennsylvania
647	Okuno-Fujiwara, M.	418	Japan	University of Tokyo
648	Ireland, Peter	417	U.S.	Boston College
649	Salanié, Bernard	417	France	Columbia University
650	Huizinga, Harry	417	U.S.	Tilburg University
651	Foges, Francoise	416	Belgium	U. Paris IX (Dauphine)
652	Edlin, Aaron	416	U.S.	U. of Cal., Berkeley
653	Weinstein, David	416	U.S.	Columbia University
654	Blau, David	416	U.S.	Ohio State University
655	Albrecht, Jim	416	U.S.	Georgetown University
656	Rust, John	416	U.S.	University of Maryland
657	Casella, Alessandra	416	Italy	Columbia University
658	Johannesson, Magnus	415	Sweden	Stockholm Sch. of Ecs.
659	McCulloch, J.Huston	415	U.S.	Ohio State University
660	Davidson, Carl	415	U.S.	Michigan State U.
661	Miller, Robert-A.	415	Australia	Carnegie Mellon U.
662	Bera, Anil	415	India	U. of Illinois, Urbana
663	Watson, Joel	413	U.S.	U. of Cal., San Diego
664	Peck, James	412	U.S.	Ohio State University
665	Demange, Gabrielle	410	France	EHESS - Paris
666	Snyder, James	410	U.S.	MIT
667	Booth, Alison	409	Australia	University of Essex
668	Lagunoff, Roger	409	U.S.	Georgetown University
669	Vries, Casper-De	407	Netherlands	Erasmus University
670	Taylor, Robert	407	UK	U. of Nottingham
671	Smith, Lones	407	Canada	University of Michigan
672	DeJong, David	406	U.S.	University of Pittsburgh
673	Fogel, Robert	406	U.S.	University of Chicago
674	Saez, Emmanuel	406	France	U. of Cal., Berkeley
675	Chen, Xiaohong	405	China	New York University
676	Baxter, Marianne	404	U.S.	Boston University
677	Albert-Ma, Ching-to	404	China	Boston University
678	Ogaki, Masao	404	Japan	Ohio State University
679	Welch, Ivo	404	U.S.	Brown University
680	Shimer, Robert	403	U.S.	University of Chicago
681	Milne, Frank	403	Australia	Queen's University
682	Hercowitz, Zvi	402	Israel	University of Tel Aviv

683	Rose, Nancy	401	U.S.	MIT
684	Aoki, Masahiko	401	Japan	University of Chicago
685	Bruce, Neil	401	Canada	U. of Washington
686	Smith, Gregor	401	Canada	Queen's University
687	Sprumont, Yves	400	Belgium	University of Montreal
688	Zenou, Yves	400	France	Stockholm University
689	White, Michelle	400	U.S.	U. of Cal., San Diego
690	Brito, Dagobert	400	U.S.	Rice University
691	Desai, Padma	399	India	Columbia University
692	Deneckere, Raymond	399	Belgium	U. of Wisconsin
693	Davis, Donald	399	U.S.	Columbia University
694	van-Dijk, Herman	398	Netherlands	Erasmus University
695	Angeletos, G. M.	398	Greece	MIT
696	Hermalin, Benjamin	398	U.S.	U. of Cal., Berkeley
697	Boldrin, Michele	396	Italy	Washington U., St Louis
698	Araujo, Aloisio	396	Brazil	IMPA & FGV, Brazil
699	Bergemann, Dirk	396	Germany	Yale University
700	Raa, Thijs	396	Netherlands	Tilburg University
701	Tornell, Aaron	396	Mexico	U. of California, LA
702	Olsen, Randy	395	U.S.	Ohio State University
703	Irwin, Douglas	395	U.S.	Dartmouth College
704	Levin, Richard	395	U.S.	Yale University
705	Neyman, Abraham	394	Israel	Hebrew University
706	Gersovitz, Mark	394	Canada	Johns Hopkins
707	Williams, Steven	394	U.S.	U. of Illinois, Urbana
708	Aliprantis, C.D.	394	Greece	Purdue University
709	Ploberger, Werner	393	Austria	Washington U., St Louis
710	Roberts, Kevin	393	UK	Oxford University
711	Atkeson, Andrew	392	U.S.	U. of California, LA
712	Schultz, Christian	392	Denmark	U. of Copenhagen
713	Kahn, Matthew	392	U.S.	U. of California, LA
714	Schwab, Robert	391	U.S.	University of Maryland
715	Lucas, Robert-E.B.	391	UK	Boston University
716	Taber, Christopher	390	U.S.	U. of Wisconsin
717	Neumann, George	390	U.S.	University of Iowa
718	Chew, Soo-Hong	390	UK	Hong Kong University
719	Kandori, Michihiro	389	Japan	University of Tokyo
720	DiNardo, John	388	U.S.	University of Michigan
721	Hotz, Joseph	388	U.S.	Duke University
722	Mieszkowski, Peter	388	Canada	Rice University
723	Marvel, Howard	386	U.S.	Ohio State University
724	Vegh, Carlos	386	Uruguay	University of Maryland
725	Courant, Paul	386	U.S.	University of Michigan
726	Walker, Mark	385	U.S.	University of Arizona
727	Foster, James	385	U.S.	Vanderbilt University
728	Silberberg, Eugene	384	U.S.	U. of Washington
729	Uribe, Martin	384	Argentina	Duke University
730	Hosios, Arthur	384	Canada	University of Toronto
731	Biais, Bruno	383	France	Toulouse University
732	Sen, Arunava	383	India	Indian Stat. Institute
733	Hendel, Igal	383	Israel	Northwestern University
734	Berliant, Marcus	382	U.S.	Washington U., St Louis
735	Mulligan, Casey	381	U.S.	University of Chicago
736	Sjostrom, Tomas	381	Sweden	Rutgers University
737	Kortum, Samuel	381	U.S.	University of Chicago
738	Moroney, John	381	U.S.	Texas A and M
739	Florens, Jean-Pierre	381	France	Toulouse University
740	Mathewson, Frank	380	Canada	University of Toronto
741	Uhlig, Harald	380	Germany	University of Chicago
742	Stern, Steven	379	U.S.	University of Virginia
743	Ausubel, Lawrence	379	U.S.	University of Maryland
744	Findlay, Ronald	379	Birmania	Columbia University
745	Imrohoroglu, Ayse	379	Turkey	U. of Southern California
746	Donald, Stephen	379	Australia	U. of Texas, Austin
747	Beetsma, R.	378	Netherlands	University of Amsterdam
748	Corbae, Dean	378	U.S.	U. of Texas, Austin
749	Goulder, Lawrence	378	U.S.	Stanford University
750	Tsiddon, Daniel	377	Israel	University of Tel Aviv
751	Chamley, Christophe	377	France	Boston University
752	Falk, Armin	376	Germany	University of Bonn
753	Magill, Michael	376	UK	U. of Southern California
754	Shephard, Neil	376	UK	Oxford University
755	Craine, Roger	376	U.S.	U. of Cal., Berkeley
756	Kovenock, Dan	376	Israel	Purdue University
757	Krishna, Vijay	374	India	PA State University
758	Hennessy, David	374	Ireland	Iowa State University
759	Borts, George	373	U.S.	Brown University
760	Engers, Maxim	373	South Africa	University of Virginia
761	Roberts, Mark	370	U.S.	PA State University
762	Vroman, Susan	369	U.S.	Georgetown University
763	Marshall, Robert	368	U.S.	PA State University
764	Cramton, Peter	368	U.S.	University of Maryland
765	van-Wincoop, Eric	366	Netherlands	University of Virginia
766	Boyer, Marcel	365	Canada	University of Montreal
767	Lach, Saul	365	Israel	Hebrew University
768	Knight, John	365	South Africa	Oxford University
769	Zimmermann, Klaus	365	Germany	University of Bonn
770	Glazer, Jacob	364	Israel	University of Tel Aviv
771	Kubler, Felix	364	Germany	U. of Pennsylvania
772	Weibull, Jörgen	364	Sweden	Stockholm Sch. of Ecs.
773	Beenstok, Michael	364	UK	Hebrew University
774	Starmer, Chris	363	UK	U. of Nottingham
775	Gregory, Allan	362	Canada	Queen's University
776	Watts, Michael	362	U.S.	Purdue University
777	Walker, Ian	362	UK	University of Warwick
778	Admati, Anat	361	Israel	Stanford University
779	Faust, Jon	361	U.S.	Johns Hopkins
780	Trefler, Daniel	360	Canada	University of Toronto
781	Kooreman, Peter	359	Netherlands	Tilburg University
782	Lavy, Victor	359	Israel	Hebrew University
783	Sieg, Holger	357	Germany	Carnegie Mellon U.
784	Seidmann, Daniel	356	UK	U. of Nottingham

785	Murrell, Peter	356	UK	University of Maryland
786	Young, Alwyn	356	U.S.	LSE
787	Gardner, Roy	356	U.S.	University of Indiana
788	Manuel Arellano	355	Spain	CEMFI, Spain
789	Taylor, Alan	354	UK	U. California, Davis
790	Medoff, James	353	U.S.	Harvard University
791	Jensen, Henrik	352	Denmark	U. of Copenhagen
792	Black, Sandra	352	U.S.	U. of California, LA
793	Schmitt-Grohe, S.	351	Germany	Duke University
794	Rauch, James	351	U.S.	U. of Cal., San Diego
795	Duggan, John	351	U.S.	University of Rochester
796	Diba, Behzad	350	Iran	Georgetown University
797	McElroy, Marjorie	350	Canada	Duke University
798	Bhaskar, V.	350	India	Univ. College London
799	McCafferty, Stephen	349	U.S.	Ohio State University
800	Maccini, Louis	349	U.S.	Johns Hopkins
801	Baer, Werner	349	U.S.	U. of Illinois, Urbana
802	Manove, Michael	348	U.S.	Boston University
803	Brada, Josef	348	U.S.	Arizona State University
804	Disney, Richard	347	UK	U. of Nottingham
805	Wright, Gavin	346	U.S.	Stanford University
806	Caselli, Francesco	346	Italy	LSE
807	Ait-Sahalia, Yacine	346	France	Princeton University
808	Chang, Roberto	345	Peru	Rutgers University
809	Zeira, Joseph	345	Israel	Hebrew University
810	Kiviet, Jan-F.	344	Netherlands	University of Amsterdam
811	Anderson, Gordon	343	UK	University of Toronto
812	Cogley, Timothy	343	U.S.	U. California, Davis
813	Kilian, Lutz	343	Germany	University of Michigan
814	Masson, Robert	342	U.S.	Cornell University
815	Matzkin, Rosa	342	Israel	U. of California, LA
816	Moschini, Giancarlo	342	Italy	Iowa State University
817	Orazem, Peter	342	U.S.	Iowa State University
818	Gale, Ian	342	Canada	Georgetown University
819	Renault, Eric	341	France	U. of North Carolina
820	Wheaton, William	341	U.S.	MIT
821	Tamer, Elie	340	U.S.	Northwestern University
822	Nijman, T.E.	340	Netherlands	Tilburg University
823	Potters, Jan	340	Netherlands	Tilburg University
824	van-Soest, A.H.O.	340	Netherlands	Tilburg University
825	Persico, Nicola	340	Italy	New York University
826	Mariotti, Thomas	339	France	Toulouse University
827	Benoît, Jean-Pierre	339	U.S.	New York University
828	Ellingsen, Tore	338	Norway	Stockholm Sch. of Ecs.
829	Hsieh, Chang-Tai	338	U.S.	U. of Cal., Berkeley
830	Börgers, Tilman	338	Germany	University of Michigan
831	Hong, Han	337	China	Stanford University
832	Weintraub, E.-Roy	337	U.S.	Duke University
833	Burnside, Craig	337	Canada	Duke University
834	Blanchflower, David	336	UK	Dartmouth College
835	Bierens, Herman	336	Netherlands	PA State University
836	Wren-Lewis, Simon	336	UK	Oxford University
837	Meyer, Jack	335	U.S.	Michigan State U.
838	Tesfatsion, Leigh	334	U.S.	Iowa State University
839	Camera, Gabriele	334	Italy	University of Iowa
840	Osborne, Martin	334	UK	University of Toronto
841	McLennan, Andrew	334	U.S.	U. Queensland, Australia
842	Alvarez, Fernando	333	Argentina	University of Chicago
843	Jullien, Bruno	333	France	Toulouse University
844	Manelli, Alejandro	333	Argentina	Arizona State University
845	Klein, Roger	333	U.S.	Rutgers University
846	MaCurdy, Thomas	333	U.S.	Stanford University
847	Brandenburger, Adam	332	UK	New York University
848	O'Donoghue, Edward	331	U.S.	Cornell University
849	Martin, Lawrence	331	U.S.	Michigan State U.
850	Dutta, Prajit	331	India	Columbia University
851	Sacerdote, Bruce	331	U.S.	Dartmouth College
852	Casas, Francois	330	Egypt	University of Toronto
853	Bergin, James	329	Ireland	Queen's University
854	Williams, Arlington	329	U.S.	University of Indiana
855	Gustman, Alan	329	U.S.	Dartmouth College
856	De Jong, Robert	329	Netherlands	Ohio State University
857	Werning, Iván	328	Argentina	MIT
858	Ravikumar, B.	327	India	University of Iowa
859	Armstrong, Mark	327	UK	Univ. College London
860	Swank, Otto	327	Netherlands	Erasmus University
861	Ruud, Paul	326	Canada	U. of Cal., Berkeley
862	Wilson, Charles	326	U.S.	New York University
863	Konishi, Hideo	325	Japan	Boston College
864	Sanders, Seth	324	U.S.	University of Maryland
865	Perez-Castrillo, David	324	Spain	U. Autónoma, Barcelona
866	Kim, Chang-Jin	324	South Korea	U. of Washington
867	Hoffman, Dennis	324	U.S.	Arizona State University
868	Matusz, Steven	323	U.S.	Michigan State U.
869	Dufwenberg, Martin	323	Sweden	University of Arizona
870	Corsetti, Giancarlo	323	Italy	European Institute
871	Gilligan, Tom	323	U.S.	U. of Southern California
872	Goldberg, Pinelopi	323	Germany	Princeton University
873	Sonnemans, Joep	323	Netherlands	University of Amsterdam
874	Chernozhukov, Victor	323	Belarus	MIT
875	Volij, Oscar	323	Argentina	Iowa State University
876	Valimaki, Juuso	322	Finland	U. Helsinki, Finland
877	Shannon, Chris	322	U.S.	U. of Cal., Berkeley
878	Segerstrom, Paul	322	U.S.	Stockholm Sch. of Ecs.
879	Lombra, Raymond	320	U.S.	PA State University
880	Lemieux, Thomas	320	Canada	U. of British Columbia
881	Flinn, Christopher	320	U.S.	New York University
882	Vytlacil, Edward	319	U.S.	Columbia University
883	Parks, Robert	318	U.S.	Washington U., St Louis
884	de la Croix, David	318	Belgium	Catholic U. of Louvain
885	Cripps, Martin	318	UK	Univ. College London
886	Rossi-Hansberg, E.	317	Mexico	Princeton University

887	Prat, Andrea	317	Italy	LSE
888	Wiggins, Steven	317	U.S.	Texas A and M
889	Ochs, Jack	316	U.S.	University of Pittsburgh
890	Amir, Rabah	316	U.S.	University of Arizona
891	Goyal, Sanjeev	316	India	Cambridge University
892	Scarf, Herbert	315	U.S.	Yale University
893	Foster, Andrew	315	U.S.	Brown University
894	Xiao, Zhijie	314	China	Boston College
895	Manuelli, Rodolfo	313	Argentina	U. of Wisconsin
896	Eswaran, Mukesh	313	India	U. of British Columbia
897	Miguel, Edward	313	U.S.	U. of Cal., Berkeley
898	Phelan, Christopher	313	U.S.	University of Minnesota
899	Dominguez, Kathryn	312	U.S.	University of Michigan
900	Hansen, Gary	312	U.S.	U. of California, LA
901	Corchón, Luis	311	Spain	U. Carlos III, Spain
902	Imrohoroglu, S.	310	Turkey	U. of Southern California
903	Border, Kim	310	U.S.	CA Institute of Tech.
904	Levin, Jonathan	310	U.S.	Stanford University
905	Meyer, Margaret	309	U.S.	Oxford University
906	Tesar, Linda	309	U.S.	University of Michigan
907	Choi, In	308	South Korea	Hong Kong University
908	Haan, Wouter-den	308	Netherlands	University of Amsterdam

APPENDIX V

MEMBERS OF ELITES I, II, AND III AMONG THE YOUNGER POPULATION

ELITE I

	Name	Q index	Nationality	Current Job		Name	Q index	Nationality	Current Job
1	Ray, Debraj	2489	India	New York University	13	Card, David	1345	Canada	U. of California, Berkley
2	Shleifer, Andrei	2433	U.S.	Harvard University	14	Campbell, John	1314	UK	Harvard University
3	Poterba, James	1845	U.S.	MIT	15	Kremer, Michael	1311	U.S.	Harvard University
4	Alesina, Alberto	1648	Italy	Harvard University	16	Glaeser, Edward	1298	U.S.	Harvard University
5	Aghion, Philippe	1553	France	Harvard University	17	Jackson, Matthew	1297	U.S.	Stanford University
6	Acemoglu, Daron	1520	UK	MIT	18	Caballero, Ricardo	1282	Chile	MIT
7	Mankiw, Gregory	1510	U.S.	Harvard University	19	Wright, Randall	1221	Canada	University of Pennsylvania
8	List, John	1464	U.S.	University of Chicago	20	Cutler, David	1207	U.S.	Harvard University
9	Besley, Tim	1422	UK	London Sch. of Economics	21	Katz, Lawrence	1199	U.S.	Harvard University
10	Murphy, Kevin M.	1408	U.S.	University of Chicago	22	Stein, Jeremy	1187	U.S.	Harvard University
11	Newey, Whitney	1392	U.S.	MIT	23	Diebold, Francis	1179	U.S.	University of Pennsylvania
12	Krueger, Alan	1391	U.S.	Princeton University					

ELITE II

	Name	Q index	Nationality	Current Job		Name	Q index	Nationality	Current Job
24	Stock, James	1147	U.S.	Harvard University	48	Rustichini, Aldo	828	Italy	University of Minnesota
25	Lewbel, Arthur	1139	U.S.	Boston College	49	Galor, Oded	818	Israel	Brown University
26	Kehoe, Patrick	1072	U.S.	University of Minnesota	50	Vives, Xavier	798	Spain	IESE
27	Persson, Torsten	1041	Sweden	London Sch. of Economics	51	Shapiro, Matthew	791	U.S.	University of Michigan
28	Gruber, Jonathan	1022	U.S.	MIT	52	Ours, Jan-van	776	Netherlands	Tilburg University
29	Currie, Janet	988	Canada	Columbia University	53	Bernhardt, Dan	774	U.S.	U. of Illinois, Urbana
30	Levitt, Steven	968	U.S.	University of Chicago	54	Martimort, David	772	France	Toulouse University
31	Morris, Stephen	961	UK	Princeton University	55	Hubbard, Robert	771	U.S.	Columbia University
32	Bolton, Patrick	955	France	Columbia University	56	Bossert, Walter	768	Germany	University of Montreal
33	Romer, David	939	U.S.	U. of California, Berkley	57	Wakker, Peter	767	Netherlands	Erasmus University
34	Banerjee, Abhijit	929	India	MIT	58	Mailath, George	763	Australia	University of Pennsylvania
35	Imbens, Guido	926	Netherlands	Harvard University	59	Rogerson, Richard	762	Canada	Arizona State University
36	Bovenberg, Lans	888	Netherlands	Tilburg University	60	Franses, Ph.-Hans	761	U.S.	Erasmus University
37	Angrist, Joshua	875	U.S.	MIT	61	Neumark, David	760	U.S.	U. of California, Irvine
38	Coate, Steve	871	UK	Cornell University	62	Moore, John	759	UK	U. Edinburgh, Scotland
39	Browning, Martin	870	UK	Oxford University	63	Ng, Serena	758	Canada	Columbia University
40	Keane, Michael	869	U.S.	U. of New South Wales	64	Greenwood, Jeremy	758	Canada	University of Pennsylvania
41	Caplin, Andrew	864	UK	New York University	65	Bagwell, Kyle	741	U.S.	Columbia University
42	Matsuyama, Kiminori	862	Japan	Northwestern University	66	Greenaway, David	737	UK	University of Nottingham
43	Duffie, Darrell	859	Canada	Stanford University	67	Perron, Pierre	737	Canada	Boston University
44	Benabou, Roland	850	France	Princeton University	68	Anderson, Simon	736	UK	University of Virginia
45	Rochet, Jean-Charles	849	France	Toulouse University	69	Li, Qi	735	China	Texas A and M
46	West, Kenneth	841	U.S.	U. of Wisconsin, Madison	70	Engel, Charles	731	U.S.	U. of Wisconsin, Madison
47	Taylor, Mark	831	UK	University of Warwick	71	Dekel-Tabak, Eddie	728	Israel	Northwestern University

72	Linton, Oliver	728	UK	London Sch. of Econ.	75	Devereux, Michael	714	Ireland	Univ. of British Columbia
73	Ghysels, Eric	724	Belgium	U. of North Carolina	76	MacLeod, W.	712	Canada	Columbia University
74	Jehiel, Philippe	722	France	Univ. College London					

ELITE III

	Name	Q index	Nationality	Current Job		Name	Q index	Nationality	Current Job
77	Timmermann, Allan	705	UK	U. of Cal., San Diego	120	Shi, Shouyong	596	China	University of Toronto
78	Smith, Richard	701	UK	Cambridge University	121	Galí, Jordi	596	Spain	U. Pompeu Fabra
79	Hansen, Bruce	695	U.S.	U. of Wisconsin, Mad.	122	Krusell, Per	589	Sweden	Princeton University
80	Bollerslev, Tim	694	Denmark	Duke University	123	Cremer, Helmuth	588	Belgium	Toulouse University
81	Hamilton, James	689	U.S.	U. of Cal., San Diego	124	Gibbons, Robert	585	U.S.	MIT
82	Gul, Faruk	687	Turkey	Princeton University	125	Staiger, Robert	584	U.S.	Stanford University
83	Rabin, Matthew	686	U.S.	U. of California, Berkley	126	Rey, Patrick	581	France	Toulouse University
84	Klemperer, Paul	685	UK	Oxford University	127	Skinner, Jonathan	571	U.S.	Dartmouth College
85	Hahn, Jinyong	683	South Korea	U. of California, LA	128	Morgan, John	566	U.S.	U. of California, Berkley
86	Andreoni, James	683	U.S.	U. of Cal., San Diego	129	Moretti, Enrico	566	Italy	U. of California, Berkley
87	Meghir, Costas	682	UK	Univ. College London	130	Kocherlakota, N.	565	U.S.	University of Minnesota
88	Le-Breton, Michel	679	France	Toulouse University	131	Costa, Dora	560	U.S.	U. of California, LA
89	Rebelo, Sergio	679	Portugal	Northwestern University	132	Wooldridge, Jeffrey	559	U.S.	Michigan State U.
90	Whinston, Michael	672	U.S.	Northwestern University	133	Grant, Simon	556	Australia	Rice University
91	Sala-i-Martin, Xavier	671	Spain	Columbia University	134	Jones, Charles	554	U.S.	U. of California, Berkley
92	Segal, Uzi	669	Israel	Boston College	135	Paxson, Christina	553	U.S.	Princeton University
93	Goeree, Jacob	666	Netherlands	CA Inst. of Technology	136	Serrano, Roberto	550	Spain	Brown University
94	Shin, Hyun	658	UK	Princeton University	137	Perry, Motty	541	Israel	University of Essex
95	Ball, Laurence	658	U.S.	Johns Hopkins	138	Case, Anne	536	U.S.	Princeton University
96	Ellison, Glenn	655	U.S.	MIT	139	Abreu, Dilip	535	India	Princeton University
97	Roland, Gérard	655	Belgium	U. of California, Berkley	140	Woodford, Michael	531	U.S.	Columbia University
98	Gilboa, Itzhak	655	Israel	University of Tel Aviv	141	Bound, John	529	U.S.	University of Michigan
99	SAINT-PAUL, Gilles	653	France	Toulouse University	142	Beaudry, Paul	529	Canada	U. of British Columbia
100	Cochrane, John	652	U.S.	University of Chicago	143	Canova, Fabio	526	Italy	U. Pompeu Fabra
101	Fernandez, Raquel	652	U.S.	New York University	144	Easterly, William	522	U.S.	New York University
102	Reny, Philip	650	Canada	University of Chicago	145	Reinhart, Carmen	521	U.S.	University of Maryland
103	Durlauf, Steven	648	U.S.	U. of Wisconsin, Mad.	146	Vohra, Rajiv	519	India	Brown University
104	Machin, Stephen	647	UK	Univ. College London	147	Todd, Petra	519	U.S.	U. of Pennsylvania
105	Blank, Rebecca	647	U.S.	University of Michigan	148	Cole, Harold	518	U.S.	U. of Pennsylvania
106	Moldovanu, Benny	645	Israel	University of Bonn	149	Jonathan, Thomas	516	Netherlands	U. Edinburgh, Scotland
107	Solon, Gary	638	U.S.	Michigan State U.	150	Noussair, Charles	509	U.S.	Tilburg University
108	Venables, Tony	634	UK	Oxford University	151	Duflo, Esther	509	France	MIT
109	Fershtman, Chaim	633	Israel	University of Tel Aviv	152	Krishna, Kala	507	India	PA State University
110	Che, Yeon-Koo	631	South Korea	Columbia University	153	Berry, Steven	507	U.S.	Yale University
111	Qian, Yingyi	628	China	U. of California, Berkley	154	Maggi, Giovanni	506	Italy	Yale University
112	Bisin, Alberto	627	Italy	New York University	155	Yannelis, Nicholas	504	Greece	U. of Illinois, Urbana
113	Dolado, Juanjo	623	Spain	U. Carlos III, Spain	156	Swinkels, Jeroen	502	Canada	Washington U., St Louis
114	Gollier, Christian	620	Belgium	Toulouse University	157	Weil, David	501	U.S.	Brown University
115	Harrington, Joseph	614	U.S.	Johns Hopkins	158	Bai, Jushan	498	China	New York University
116	Attanasio, Orazio	609	Italy	Univ. College London	159	Zhou, Lin	495	China	Arizona State University
117	Levine, Ross	609	U.S.	Brown University	160	Harris, Christopher	493	UK	Cambridge University
118	Leahy, John	601	U.S.	New York University	161	Wang, Ping	488	Taiwan	Washington U., St Louis
119	van-den-Berg, Gerard	600	Netherlands	Free U. of Amsterdam	162	Pesendorfer, W.	487	Austria	Princeton University

163	Tian, Guoqiang	486	China	Texas A and M
164	Hines, James	485	U.S.	University of Michigan
165	Hopenhayn, Hugo	484	Argentina	U. of California, LA
166	Kiyotaki, Nobuhiro	483	Japan	Princeton University
167	Van-Reenen, John	483	UK	London Sch. of Ecs.
168	Vickers, John	482	UK	Oxford University
169	Engel, Eduardo	481	Chile	Yale University
170	Levinsohn, James	481	U.S.	University of Michigan
171	Ok, Efe	479	Turkey	New York University
172	van-Damme, Eric	478	Netherlands	Tilburg University
173	Smith, Jeffrey	476	U.S.	University of Michigan
174	Quah, Danny	474	U.S.	London S. of Economics
175	Bronars, Stephen	474	U.S.	U. of Texas, Austin
176	Honore, Bo	474	Denmark	Princeton University
177	Romer, Christina	473	U.S.	U. of California, Berkley
178	Sonmez, Tayfun	473	Turkey	Boston College
179	Greenstone, Michael	468	U.S.	MIT
180	Chib, Siddhartha	468	India	Washington U., St Louis
181	Cason, Timothy	465	U.S.	Purdue University
182	Ramey, Garey	462	U.S.	U. of Cal., San Diego
183	Leybourne, Steve	462	UK	U. of Nottingham
184	Lizzeri, Alessandro	460	Italy	New York University
185	Carroll, Christopher	459	U.S.	Johns Hopkins
186	Autor, David	458	U.S.	MIT
187	Huck, Steffen	457	Germany	Univ. College London
188	Hanson, Gordon	454	U.S.	U. of Cal., San Diego
189	Ríos-Rull, José-Víctor	453	Spain	University of Minnesota
190	Segal, Ilya	452	Russia	Stanford University
191	Merlo, Antonio	451	Italy	U. of Pennsylvania
192	Ramey, Valerie	451	U.S.	U. of Cal., San Diego
193	Laibson, David	450	U.S.	Harvard University
194	Kimball, Miles	450	U.S.	University of Michigan
195	Vogelsang, Timothy	449	U.S.	Michigan State U.
196	Park, Joon	446	South Korea	Texas A and M
197	Lipman, Barton	445	U.S.	Boston University
198	Ohanian, Lee	445	U.S.	U. of California, LA
199	Mullainathan, Sendhil	443	U.S.	Harvard University
200	Klenow, Pete	442	U.S.	Stanford University
201	Swanson, Norman	442	Canada	Rutgers University
202	Fan, Jianqing	441	China	Princeton University
203	Clarida, Richard	439	U.S.	Columbia University
204	Thomas, Duncan	437	Zimbabwe	U. of California, LA
205	Lo, Andrew	436	U.S.	MIT
206	Athey, Susan	436	U.S.	Harvard University
207	Elliott, Graham	431	Australia	U. of Cal., San Diego
208	Winter, Eyal	431	Israel	Hebrew University
209	Choi, Jay	430	South Korea	Michigan State U.
210	Matsushima, Hitoshi	430	Japan	University of Tokyo
211	Holmes, Thomas	429	U.S.	University of Minnesota
212	Santos-Silva, João	426	Portugal	University of Essex
213	Coles, Melvyn	425	UK	University of Essex
214	Williamson, Stephen	424	Canada	Washington U., St Louis
215	Manning, Alan	420	UK	London S. of Economics
216	Bils, Mark	420	U.S.	University of Rochester
217	Duffy, John	419	U.S.	University of Pittsburgh
218	Ireland, Peter	417	U.S.	Boston College
219	Huizinga, Harry	417	U.S.	Tilburg University
220	Salanié, Bernard	417	France	Columbia University
221	Rust, John	416	U.S.	University of Maryland
222	Forges, Françoise	416	Belgium	U. Paris IX
223	Edlin, Aaron	416	U.S.	U. of California, Berkley
224	Casella, Alessandra	416	Italy	Columbia University
225	Weinstein, David	416	U.S.	Columbia University
226	Johannesson, Magnus	415	Sweden	Stockholm S. of Ecs.
227	Bera, Anil	415	India	U. of Illinois, Urbana
228	Watson, Joel	413	U.S.	U. of Cal., San Diego
229	Peck, James	412	U.S.	Ohio State University
230	Snyder, James	410	U.S.	MIT
231	Booth, Alison	409	Australia	University of Essex
232	Lagunoff, Roger	409	U.S.	Georgetown University
233	De Vries, Casper	407	Netherlands	Erasmus University
234	Taylor, Robert	407	UK	U. of Nottingham
235	Smith, Lones	407	Canada	University of Michigan
236	DeJong, David	406	U.S.	University of Pittsburgh
237	Saez, Emmanuel	406	France	U. of California, Berkley
238	Chen, Xiaohong	405	China	New York University
239	Ogaki, Masao	404	Japan	Ohio State University
240	Baxter, Marianne	404	U.S.	Boston University
241	Welch, Ivo	404	U.S.	Brown University
242	Ma, Albert	404	China	Boston University
243	Shimer, Robert	403	U.S.	University of Chicago
244	Smith, Gregor	401	Canada	Queen's University
245	Rose, Nancy	401	U.S.	MIT
246	Zenou, Yves	400	France	Stockholm University
247	Sprumont, Yves	400	Belgium	University of Montreal
248	Davis, Donald	399	U.S.	Columbia University
249	Deneckere, Raymond	399	Belgium	U. of Wisconsin, Mad.
250	Angeletos, G-Marios	398	Greece	MIT
251	Hermalin, Benjamin	398	U.S.	U. of California, Berkley
252	Van-Dijk, Herman	398	Netherlands	Erasmus University
253	Tornell, Aaron	396	Mexico	U. of California, LA
254	Bergemann, Dirk	396	Germany	Yale University
255	Boldrin, Michele	396	Italy	Washington U., St Louis
256	Irwin, Douglas	395	U.S.	Dartmouth College
257	Schultz, Christian	392	Denmark	U. of Copenhagen
258	Kahn, Matthew	392	U.S.	U. of California, LA

259	Atkeson, Andrew	392	U.S.	U. of California, LA
260	Taber, Christopher	390	U.S.	U. of Wisconsin, Mad.
261	Kandori, Michihiro	389	Japan	University of Tokyo
262	DiNardo, John	388	U.S.	University of Michigan
263	Vegh, Carlos	386	Uruguay	University of Maryland
264	Uribe, Martin	384	Argentina	Duke University
265	Hendel, Igal	383	Israel	Northwestern University
266	Sem, Arunava	383	India	Indian Stat. Institute
267	Biais, Bruno	383	France	Toulouse University
268	Kortum, Samuel	381	U.S.	University of Chicago
269	Sjostrom, Tomas	381	Sweden	Rutgers University
270	Mulligan, Casey	381	U.S.	University of Chicago
271	Uhlig, Harald	380	Germany	University of Chicago
272	Donald, Stephen	379	Australia	U. of Texas, Austin
273	Stern, Steven	379	U.S.	U. of Virginia
274	Imrohoroglu, Ayse	379	Turkey	U. of Southern Cal.
275	Ausubel, Lawrence	379	U.S.	University of Maryland
276	Corbae, Dean	378	U.S.	U. of Texas, Austin
277	Beetsma, R.	378	Netherlands	U. of Amsterdam
278	Tsiddon, Daniel	377	Israel	University of Tel Aviv
279	Falk, Armin	376	Germany	University of Bonn
280	Kovenock, Dan	376	Israel	Purdue University
281	Shephard, Neil	376	UK	Oxford University
282	Krishna, Vijay	374	India	PA State University
283	Hennessy, David	374	Ireland	Iowa State University
284	Engers, Maxim	373	South Africa	University of Virginia
285	Marshall, Robert	368	U.S.	PA State University
286	Cramton, Peter	368	U.S.	University of Maryland
287	van-Wincoop, Eric	366	Netherlands	University of Virginia
288	Zimmermann, Klaus	365	Germany	University of Bonn
289	Lach, Saul	365	Israel	Hebrew University
290	Kubler, Felix	364	Germany	U. of Pennsylvania
291	Glazer, Jacob	364	Israel	University of Tel Aviv
292	Starmer, Chris	363	UK	U. of Nottingham
293	Admati, Anat	361	Israel	Stanford University
294	Faust, Jon	361	U.S.	Johns Hopkins
295	Trefler, Daniel	360	Canada	University of Toronto
296	Kooreman, Peter	359	Netherlands	Tilburg University
297	Sieg, Holger	357	Germany	Carnegie Mellon U.
298	Young, Alwyn	356	U.S.	London S. of Economics
299	Arellano, Manuel	355	Spain	CEMFI, Spain
300	Taylor, Alan	354	UK	U. California, Davis
301	Jensen, Henrik	352	Denmark	U. of Copenhagen
302	Black, Sandra	352	U.S.	U. of California, LA
303	Schmitt-Grohe, S.	351	Germany	Duke University
304	Duggan, John	351	U.S.	University of Rochester
305	Rauch, James	351	U.S.	U. of Cal., San Diego
306	Bhaskar, V.	350	India	Univ. College London
307	Diba, Behzad	350	Iran	Georgetown University
308	Caselli, Francesco	346	Italy	London S. of Economics
309	Aït-Sahalia, Yacine	346	France	Princeton University
310	Chang, Roberto	345	Peru	Rutgers University
311	Zeira, Joseph	345	Israel	Hebrew University
312	Kiviet, Jan-F.	344	Netherlands	U. of Amsterdam
313	Kilian, Lutz	343	Germany	U. of Michigan
314	Cogley, Timothy	343	U.S.	U. Cal., Davis
315	Orazem, Peter	342	U.S.	Iowa State U.
316	Moschini, Giancarlo	342	Italy	Iowa State U.
317	Gale, Ian	342	Canada	Georgetown U.
318	Matzkin, Rosa	342	Israel	UCLA
319	Renault, Eric	341	France	U. of N. Carolina
320	Tamer, Elie	340	U.S.	Northwestern U.
321	Persico, Nicola	340	Italy	New York U.
322	Nijman, T.E.	340	Netherlands	Tilburg University
323	Potters, Jan	340	Netherlands	Tilburg University
324	van-Soest, A.H.O.	340	Netherlands	Tilburg University
325	Mariotti, Thomas	339	France	Toulouse University
326	Benoît, Jean-Pierre	339	U.S.	New York U.
327	Börgers, Tilman	338	Germany	U. of Michigan
328	Ellingsen, Tore	338	Norway	Stockholm S. of Ecs.
329	Hsieh, Chang-Tai	338	U.S.	U. of Cal., Berkley
330	Hong, Han	337	China	Stanford University
331	Burnside, Graig	337	Canada	Duke University
332	Blanchflower, David	336	UK	Dartmouth College
333	Camera, Gabriele	334	Italy	University of Iowa
334	Jullien, Bruno	333	France	Toulouse University
335	Alvarez, Fernando	333	Argentina	University of Chicago
336	Manelli, Alejandro	333	Argentina	Arizona State University
337	Brandenburger, A.	332	UK	New York University
338	Dutta, Prajit	331	India	Columbia University
339	Sacerdote, Bruce	331	U.S.	Dartmouth College
340	O'Donoghue, E.	331	U.S.	Cornell University
341	Bergin, James	329	Ireland	Queen's University
342	De Jong, Robert	329	Netherlands	Ohio State University
343	Werning, Iván	328	Argentina	MIT
344	Ravikumar, B.	327	India	University of Iowa
345	Armstrong, Mark	327	UK	Univ. College London
346	Swank, Otto	327	Netherlands	Erasmus University
347	Konishi, Hideo	325	Japan	Boston College
348	Sanders, Seth	324	U.S.	University of Maryland
349	Perez-Castrillo, D.	324	Spain	U. Autónoma de Barc.
350	Kim, Chang-Jin	324	South Korea	University of Washington
351	Matusz, Steven	323	U.S.	Michigan State U.
352	Chernozhukov, V.	323	Russia	MIT
353	Corsetti, Giancarlo	323	Italy	European Institute
354	Gilligan, Tom	323	U.S.	U. of Southern California

355	Goldberg, Pinelopi	323	Germany	Princeton University
356	Dufwenberg, Martin	323	Sweden	University of Arizona
357	Sonnemans, Joep	323	Netherlands	U. of Amsterdam
358	Volij, Oscar	323	Argentina	Iowa State University
359	Segerstrom, Paul	322	U.S.	Stockholm S. of Ecs.
360	Shannon, Chris	322	U.S.	U. of Cal., Berkley
361	Valimaki, Juuso	322	Finland	U. Helsinki
362	Flinn, Christopher	320	U.S.	New York University
363	Lemieux, Thomas	320	Canada	U. of British Columbia
364	Vytlacil, Edward	319	U.S.	Columbia University
365	Cripps, Martin	318	UK	Univ. College London
366	De la Croix, David	318	Belgium	Catholic U. of Louvain
367	Prat, Andrea	317	Italy	London S. of Ec.
368	Rossi-Hansberg, E.	317	Mexico	Princeton University
369	Goyal, Sanjeev	316	India	Cambridge University
370	Amir, Rabah	316	U.S.	U. of Arizona
371	Foster, Andrew	315	U.S.	Brown University
372	Xiao, Zhijie	314	China	Boston College
373	Miguel, Edward	313	U.S.	U. of Cal., Berkley
374	Phelan, Ch.	313	U.S.	U. of Minnesota
375	Manuelli, Rodolfo	313	Argentina	U. of Wisconsin, Mad.
376	Hansen, Gary	312	U.S.	U. of California, LA
377	Dominguez, K.	312	U.S.	U. of Michigan
378	Levin, Jonathan	310	U.S.	Stanford University
379	Imrohoroglu, S.	310	Turkey	U. of Southern Cal.
380	Tesar, Linda	309	U.S.	University of Michigan
381	Meyer, Margaret	309	U.S.	Oxford University
382	Den Haan, Wouter	308	Netherlands	U. of Amsterdam
383	Choi, In	308	South Korea	Hong Kong University